Pat

Price 10

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May 22, 2008

Reference No. 012559

Ms. Laura C. Price
Voluntary Cleanup Unit/Remedial Section
Bureau of Environmental Remediation
Kansas Department of Health & Environment
1000 SW Jackson Street, Suite 410
Topeka, Kansas 66612-1367

Dear Ms. Price:

Re: Results of LNAPL Investigations - TMW-130 Area
Former General Motors Fairfax I Plant
Kansas City, Kansas

On behalf of General Motors (GM), Conestoga-Rovers & Associates (CRA) is pleased to submit this letter summarizing the results of the investigation into the presence and distribution of light non-aqueous phase liquid (LNAPL) detected in temporary monitoring well TMW-130. This well is located on the eastern portion of the former General Motors Fairfax I Plant (Site) located in Kansas City, Kansas.

1.0 INTRODUCTION

1.1 BACKGROUND

Correspondence from the Kansas Department of Health & Environment (KDHE) for this Site dated March 12, 2007 entitled "Former GM Fairfax I Plant, Voluntary Cleanup Investigation (VCI) Report" presented KDHE's responses to their review of the report entitled "Additional Groundwater and Soil Sampling Data" (CRA, February 2007). In their March 12, 2007 correspondence and in a subsequent March 22, 2007 conference call, the KDHE expressed the following:

- Additional investigation is required with concern to temporary monitoring well TMW-130 to demonstrate that the LNAPL present in the well is not affecting the condition of the downgradient wells; and
- Additional monitoring wells are to be installed in areas "where new contamination has been identified".

In response to the March 12, 2007 KDHE correspondence, field activities have been performed in accordance with the Scope of Work (SOW) and procedures outlined in the previously approved "LNAPL Investigation Work Plan, TMW-130 Area" that was submitted to the KDHE by CRA in June, 2007. GM's overall goal in the investigation is to pursue a No Further Action (NFA) Determination for the former GM Fairfax I Plant Site.

1.2 SITE LOCATION AND DESCRIPTION

The Site is located at 100 Kindelberger Road, Kansas City, Kansas and is located in the floodplain of the Missouri River. Refer to Figure 1 for the Site location. The Site is vacant as operations ceased throughout 1986 and 1987, and the facility was demolished in 1987. A number of monitoring wells, however, remain on the Site. Figure 2 presents the Site layout with the locations of existing monitoring wells and highlights the TMW-130 LNAPL investigation area.

2.0 SCOPE OF WORK

As outlined in the June 2007 LNAPL Investigation Work Plan (and in the Work Plan Addendum submitted to the KDHE on February 5, 2008), an investigation of the source and extent of LNAPL detected previously at temporary monitoring well TMW-130 was conducted. This investigation included the following tasks:

- Soil Boring Advancement and Logging
- Temporary Monitoring Well Installation and Development
- LNAPL Bailout Tests
- LNAPL Sampling and Analysis
- Laser Induced Fluorescence (LIF) Investigation

3.0 FIELD PROCEDURES

3.1 SOIL BORING COMPLETION

A total of 16 soil borings (Figure 3) were completed from October 16 to 31, 2007 to a depth of 25 feet below ground surface (ft bgs) using hollow-stem auger (HSA) drilling methods. The locations of the soil borings were reviewed and approved beforehand by the Fairfax Drainage District (FDD). The location of each boring was also cleared for subsurface utilities by a private locator before drilling began. During the drilling of soil borings, soil samples were collected continuously, described and classified according the Unified Soil Classification System (USCS) by a CRA geologist, and screened for the presence of petroleum hydrocarbons using field-screening techniques. Field screening was performed using a photoionization detector (PID) as well as by the use of visual and olfactory techniques. Soil samples were prepared for field screening in the following manner:

- A discrete, representative portion of soil was collected from each split-spoon sample and was deposited into a polyethylene bag. The bag was sealed immediately and labeled with the location, date, time, and sample depth;
- The soil remained undisturbed for several minutes to equilibrate;
- The PID was used to monitor the air contained in the bag for the presence of organic vapors; and
- Visual and olfactory observations of petroleum impact were noted in the log book.

Two soil samples were submitted to Soil Technology™ in Bainbridge Island, Washington for laboratory testing using the following American Society for Testing and Materials (ASTM) methods:

- Flexible & Rigid Wall Hydraulic Conductivity of Shelby Tube Specimens (ASTM D-2434);
- Flexible Wall Hydraulic Conductivity (ASTM D-5084);
- Total Volatile Solids (ASTM D-2974);
- Particle Size Distribution (ASTM D-422); and
- Visual Classification (ASTM D-2488).

After completion, each of the 16 soil borings was abandoned by backfilling the borehole with cement/bentonite grout. A tremie pipe was used to fill the borehole from the bottom up. The ground surface at each location was restored as closely as possible to its original condition.

Stratigraphic logs for the TMW-130 Area soil borings are provided in Attachment A.

3.2 TEMPORARY MONITORING WELL INSTALLATION AND DEVELOPMENT

In addition to the 16 soil borings, eight temporary monitoring wells (TMW-139, 140, 141, 142, 143, 144, 145, and 146) were installed in October 2007 to further delineate the lateral extent of LNAPL observed at TMW-130. The locations and construction of the temporary monitoring wells (Figure 3) were reviewed and approved beforehand by the FDD. The temporary wells were installed using a HSA drill rig with 3.25-inch inside diameter augers, and were constructed of nominal 2-inch diameter polyvinyl chloride (PVC) screens (No. 10 slot) and nominal 2-inch diameter schedule 40 PVC riser pipe. The temporary wells were installed through the hollow stem of the augers. During construction, the riser pipe was capped temporarily to prevent foreign material from entering into the well.

Each temporary monitoring well was backfilled with sand to a minimum depth of 2 feet above the well screen and completed to the surface with bentonite. All drill cuttings were drummed

for proper disposal. The PVC riser at each temporary monitoring well location was completed above grade. Each well casing was capped, and a protective casing was placed over the well but was not cemented in place.

In order to establish good hydraulic communication with the aquifer and reduce the volume of sediment in the wells, the temporary monitoring wells were developed. Well development was conducted in accordance with the procedures outlined below:

i) Water was purged from the well using an electronic submersible pump and dedicated tubing.

ii) Groundwater was collected at regular intervals and the pH, temperature, and conductivity were measured using field instruments that were calibrated daily according to the manufacturer's specifications. Additionally, observations such as color, odor, and turbidity of the purged water were recorded.

Development continued until the turbidity of the monitoring wells was significantly reduced and three consistent readings of pH, temperature, and conductivity were recorded, or a minimum of ten well volumes was purged.

The temporary monitoring wells will remain in place until this investigation program is completed, after which time they will be abandoned in accordance with State regulations.

Stratigraphic and instrumentation logs for the TMW-130 Area temporary monitoring wells are provided in Attachment A. Table 1 provides well development parameters.

3.3 LNAPL BAILOUT

After well installation and development, fluid levels in each well were measured (Table 1). Those wells that initially exhibited the presence of LNAPL (TMW-139 and TMW-140) were bailed using a well-dedicated disposable polyethylene bailer until the standing oil within the well was removed. After a period of 24 hours, fluid level monitoring was again conducted at each well to determine the in-well thickness of LNAPL that had recharged into the well (Table 2).

Following the initial LNAPL bailout, fluid level monitoring in all TMW locations surrounding TMW-130 (including TMW-130) continued weekly for 6 weeks. If LNAPL was observed in a well during this period, the LNAPL was bailed until the standing oil within the well was removed. Recovered LNAPL was stored in a sealed and labeled 55-gallon drum pending characterization and proper disposal.

3.4 LNAPL SAMPLING

Following the initial bailout test, a sample of LNAPL was collected from TMW-140. The sample was collected using a disposable bailer, which allowed for the LNAPL to be poured directly into the sample container.

The sample was placed in an appropriate shipping container and sent to GW/S Environmental Consulting of Tulsa, Oklahoma for analysis.

3.5 LIF INVESTIGATION

Based on an initial evaluation of the results of the above-described assessment activities, GM proceeded with a supplemental investigation using Laser-Induced Fluorescence (LIF) to provide a better indication of the extent of LNAPL present in the subsurface, especially in soils below the water table. The scope of the LIF Investigation was described in detail in the February 5, 2008, "Work Plan Addendum - TMW-130 Area LNAPL Investigation."

Matrix Environmental, LLC of Osseo, Minnesota was contracted to perform a site investigation using an ultraviolet optical screening tool (UVOST) system to investigate the presence of LNAPL in the TMW-130 area (UVOST is one of the commercially available LIF systems). From February 26 to 28, 2008, 24 UVOST locations (Figure 4) were completed in the area surrounding TMW-130. The UVOST locations were completed across a gridded area to provide an accurate lateral and vertical representation of subsurface LNAPL presence.

CRA was on Site to provide oversight for the UVOST survey. The UVOST system delineates LNAPL impacts by detecting the presence of polynuclear aromatic hydrocarbons (PAHs) during the advancement of the probe. The UVOST probe is equipped with a sapphire window through which a laser is directed. The laser light is adsorbed by aromatic hydrocarbon molecules in contact with the window as the probe is advanced. This addition of energy (photons) to the aromatic hydrocarbons causes them to fluoresce as they return to ground state after being excited. A portion of the fluorescence emitted from any encountered aromatic constituents is returned through the sapphire window and conveyed by a fiber optic cable to a detection system attached to the Geoprobe rig. The emission data from the pulsed laser light is averaged into one reading per one-second intervals and is recorded continuously. The intensity of the fluorescence is proportional to the amount of aromatic hydrocarbon present (i.e., LNAPL saturation). The UVOST technology does not detect dissolved phase hydrocarbons. Thus, only product phase concentrations are recorded.

The UVOST investigation was conducted at 24 locations throughout the LNAPL area. At each UVOST location, the probe was pushed to a depth of 35-40 feet bgs. This depth was as much as 15 feet below the current water table and typically 5-10 feet below the deepest petroleum impacts previously identified in the saturated zone.

The use of UVOST enabled the delineation of LNAPL without having to obtain soil samples from the subsurface. The time saved on collecting subsurface soil samples meant that additional locations could be investigated for the presence of LNAPL versus conventional soil sampling methods (UVOST can enable the investigation of three to five times the amount of locations as compared to traditional soil sampling in a given time period). This technology provided an effective means of conducting a comprehensive LNAPL delineation program.

4.0 RESULTS

4.1 BORING ADVANCEMENT AND HYDRAULIC CONDUCTIVITY TESTING

A total of 16 boreholes (Figure 3) were advanced to a depth of 25 feet ft bgs. Field descriptions of soil samples indicate that the soil consists of sand, silt, and clay. Laboratory hydraulic conductivity tests conducted by Soil Technology™ were performed on two soil samples collected from the field. Sample S-101707-JH-001 was collected from soil boring SB-202 at a depth of 11.1-11.4 ft bgs. Sample S-101707-JH-002 was collected from soil boring SB-203 at a depth of 16.2-16.6 ft bgs. Laboratory tests show that sample S-101707-JH-001 had a hydraulic conductivity of $3x10^{-6}$ centimeters per second (cm/sec) and sample S-101707-JH-002 had a hydraulic conductivity of $2x10^{-2}$ cm/sec. From this data, it was concluded that sample S-101707-JH-001 can be classified (according to USCS classification) as a silt and sample S-101707-JH-002 can be classified as poorly graded/well-sorted sand. The data are included as Attachment B.

4.2 FLUID LEVEL MONITORING

Fluid level monitoring in all TMW locations around TMW-130 (including TMW-130) continued after the installation of the eight new monitoring wells. The results of the fluid level monitoring can be found in Table 2. The results of the monitoring indicate that the maximum in-well thickness of observed LNAPL was 3.31 feet, found at TMW-140, on February 28, 2008.

4.3 LNAPL NATURE AND EXTENT

Based on fluid level monitoring conducted between October 2007 and March 2008, and field screening of the soil borings drilled in October 2007, the approximate extent of the observed LNAPL was determined (Figure 5). Using field-screening data in conjunction with water/product levels taken from the monitoring wells, two hydrogeologic cross-sections were constructed in an east/west and north/south configuration (Figure 6) to present the limits of observed LNAPL. The cross-sections are depicted on Figure 7.

The laboratory analysis of the LNAPL sample collected from TMW-140 indicates that the LNAPL is a very degraded distillate (diesel/fuel oil) with no other petroleum products present. The results of the LNAPL analysis are included as Attachment C.

4.4 LIF RESULTS

The locations where UVOST was conducted and a general overview of the results are provided on Figure 8. A total of 24 UVOST locations were completed in order to delineate the LNAPL horizontally and vertically, as well as to approximate the LNAPL saturation profile and LNAPL type at each location. A CRA geologist was on Site to identify UVOST test locations and oversee the UVOST process.

The UVOST results (graphs of relative fluorescence response against depth below ground surface) are provided in Attachment D. In general, the results indicate that the majority of LNAPL impacts detected across the impacted area were of a consistent product-type. The spectral product-type waveforms indicated by the UVOST results are consistent with a product-type heavier than gasoline or diesel, such as a highly degraded diesel or heavier oil. This is consistent with the LNAPL fingerprinting results discussed in Section 4.3. In comparison to current water table elevations, the UVOST profiles indicate that the majority of impacts are in the vadose zone, with some instances of the impacted zones being submerged. Because a significant portion of the more heavily impacted areas appear to be currently situated predominantly in the vadose zone, the LNAPL thicknesses currently observed in Site monitoring wells may be approaching the maximum that will be observed over time. Consequently, the current Site conditions may be used to conservatively approximate the potential for LNAPL mobility.

Plan view interpolations of the average UVOST results across the plume are provided on Figure 8. The maximum and average UVOST readings are summarized in Table 3. It is important to note that some of the maximum fluorescence intensities identified by UVOST in various locations were only measured over a very small vertical interval, and that the majority of intensities over larger vertical intervals decreased significantly. Consequently, plotting average fluorescence intensities provides a more useful depiction of effective LNAPL impacts at each location.

5.0 CONCLUSIONS

Based on the results of the soil boring investigation, soils exhibiting visual staining or odors have been identified and delineated on the basis of visual and olfactory observations, as well as by field screening using a PID. Results of fluid level monitoring in the temporary monitoring wells show that the extent of LNAPL in the area has also been delineated. As depicted on Figure 5, these results identify a likely historical source area that appears to be centered in the TMW-130 area. The total area encompassed by soils exhibiting visual staining or odors and temporary monitoring wells that have measurable thicknesses of LNAPL measures approximately 170 feet by 300 feet.

The presence and distribution of soils exhibiting staining and/or odors and LNAPL is further supported by the results of the LIF investigation. Review of the average UVOST fluorescence

(Figure 8) indicates that the historical source may be located between TMW-130 and TMW-140, where the highest average fluorescence was observed and which is the area of the greatest observed LNAPL thickness. In the vicinity of the TMW-140 area, the UVOST results also indicate that LNAPL appears to be present as much as 10 feet below the water table (on February 28, 2008).

Should you have any questions on the above, please do not hesitate to contact us.

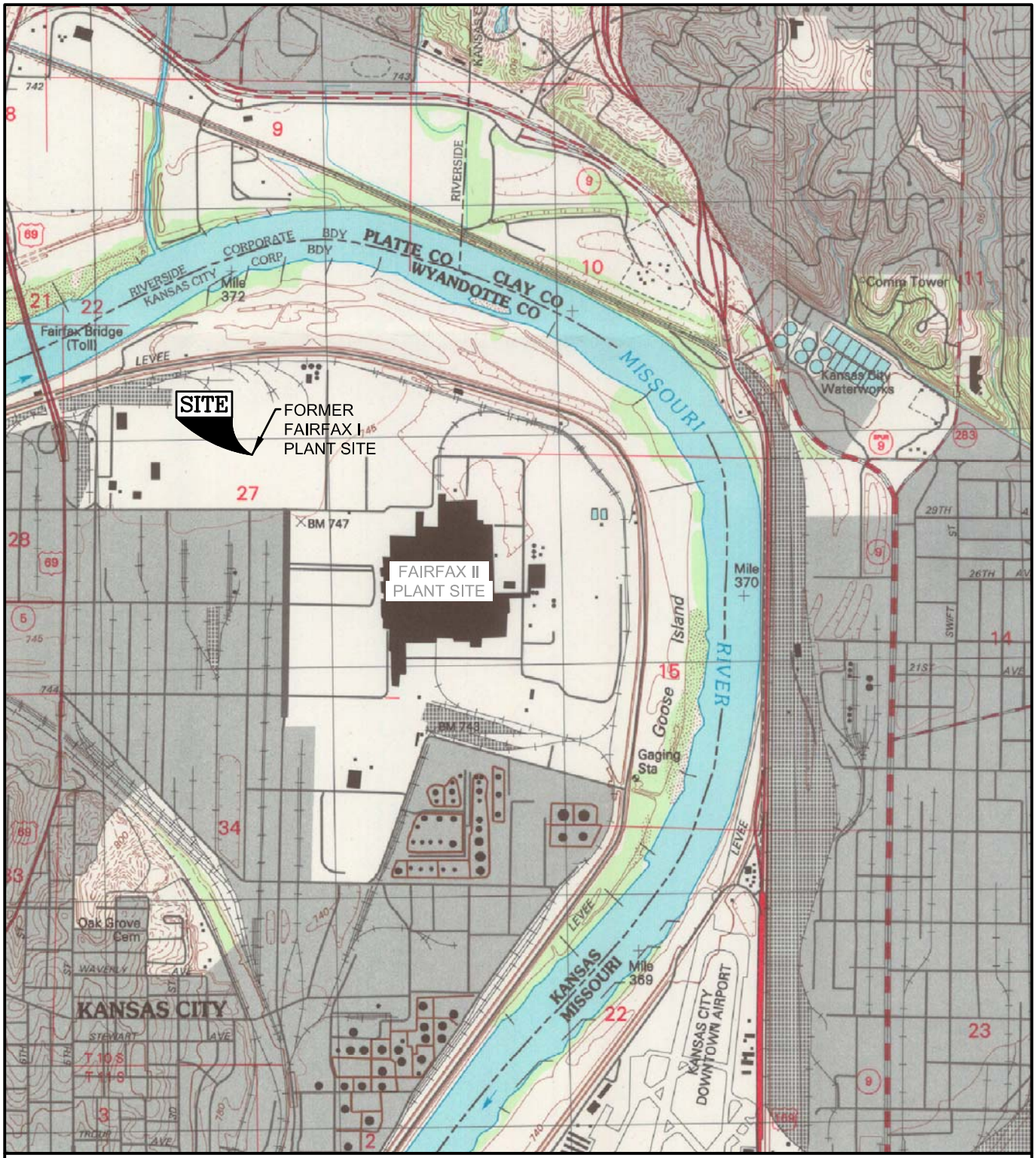
Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Phil Harvey

PH/lg/10
Encl.

c.c.: Ken Richards, GM



BASE SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE;
NORTH KANSAS CITY, MO-KS 1990

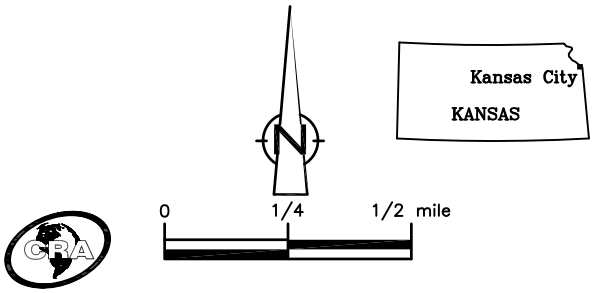


figure 1

SITE LOCATION MAP
FORMER FAIRFAX I PLANT
Kansas City, Kansas

12559-04-202080(PRIC010)GN-CO001 MAY 22/2008

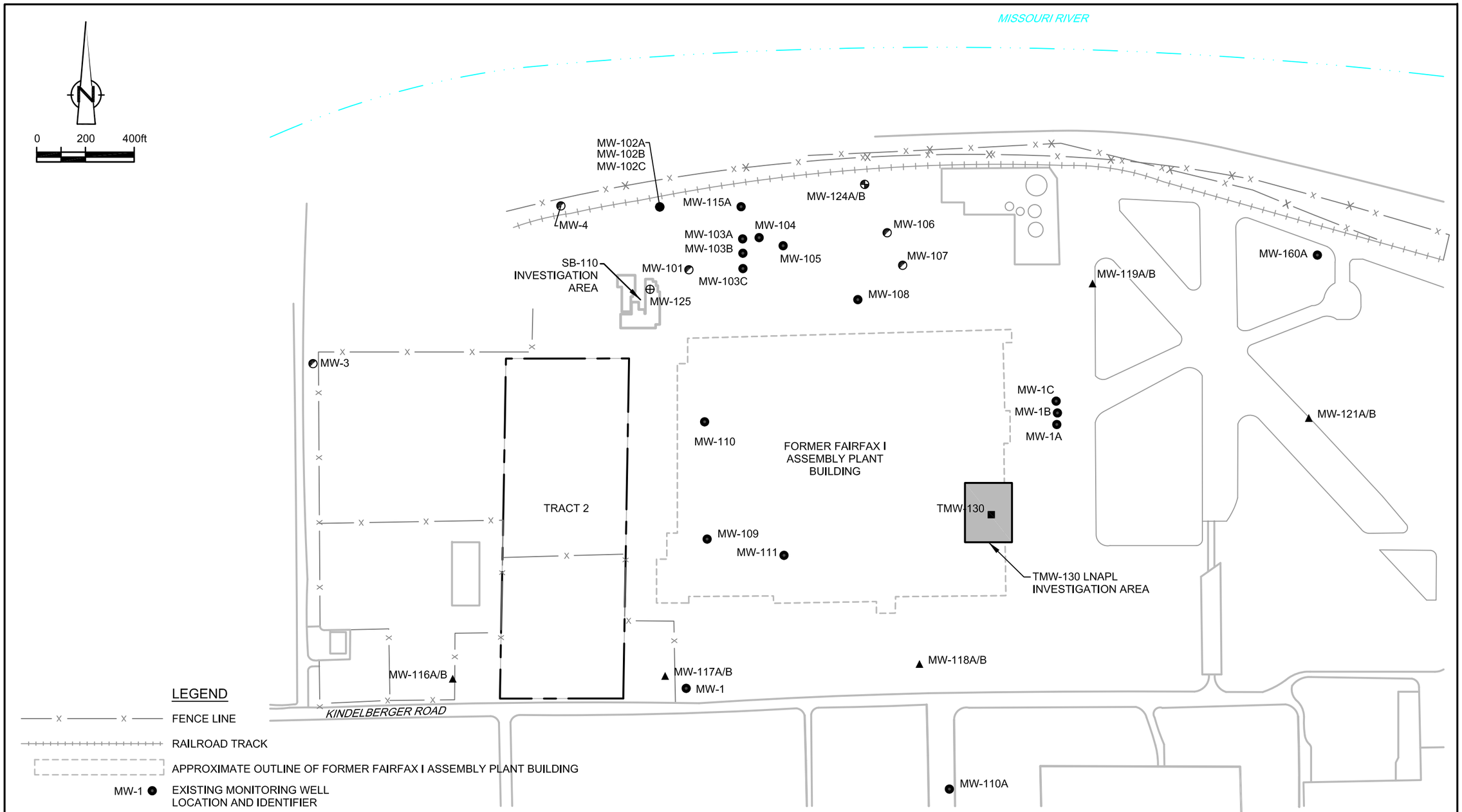


figure 2

SITE PLAN
FORMER FAIRFAX I PLANT
Kansas City, Kansas

12559-04-202080(PRIC010)GN-CO002 JAN 17/2012

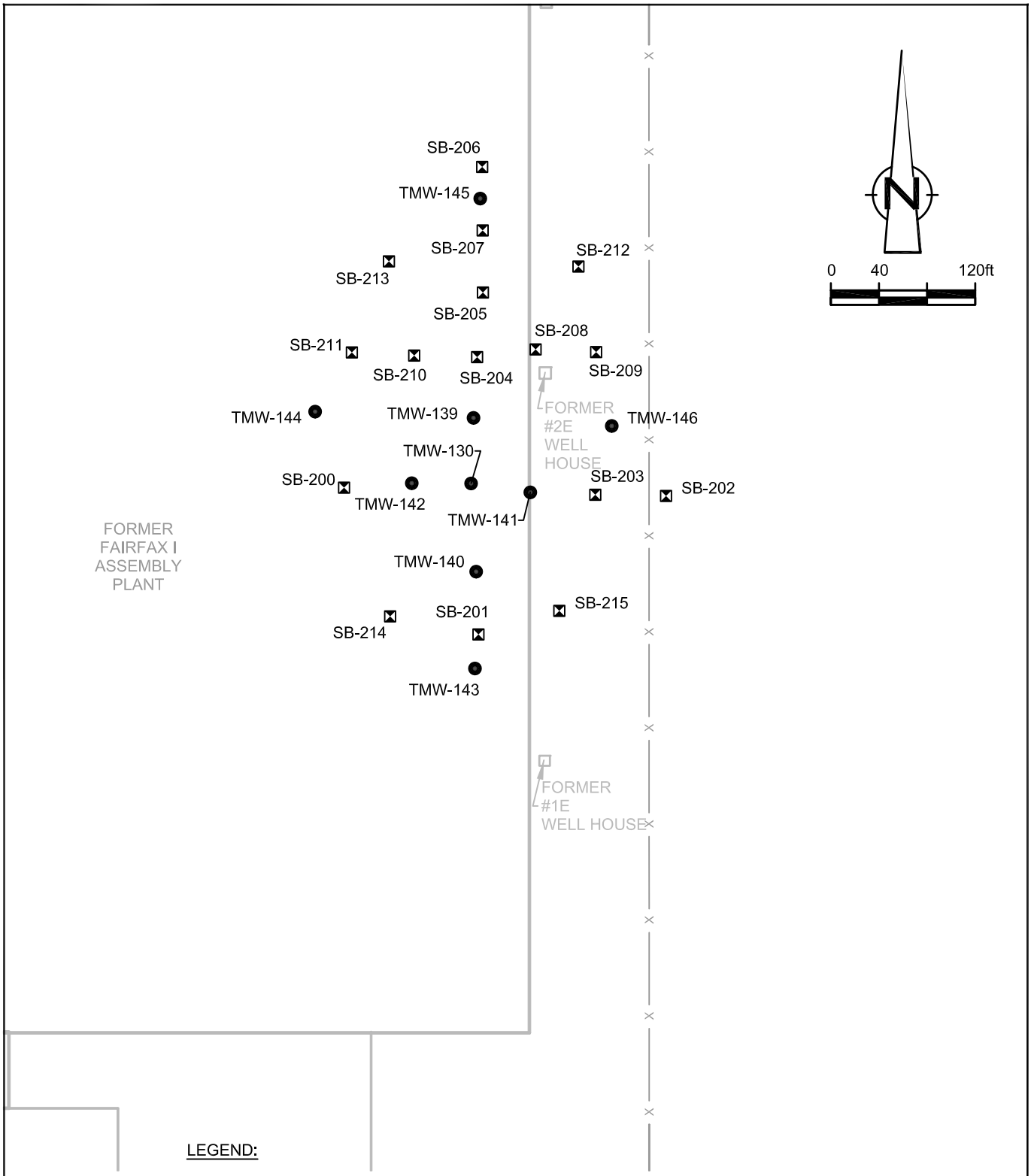
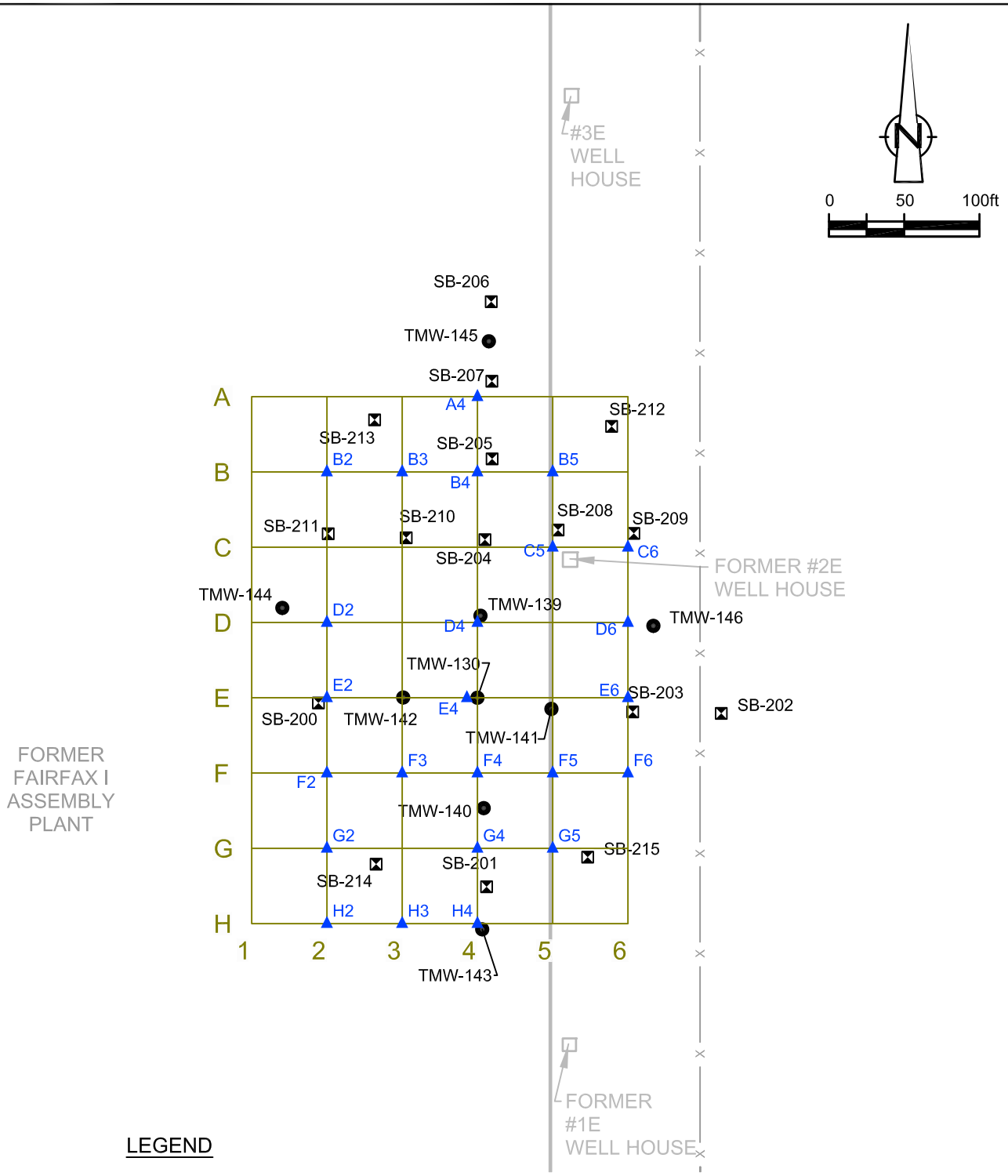


figure 3

SOIL BORING AND TEMPORARY MONITORING WELL LOCATIONS
TMW-130 LNAPL INVESTIGATION AREA
FORMER FAIRFAX I PLANT
Kansas City, Kansas

12559-04-202080(PRIC010)GN-CO003 JAN 17/2012



LEGEND

TMW-130	●	TEMPORARY MONITORING WELL LOCATION AND IDENTIFIER
SB-201	⊠	SOIL BORING LOCATION AND IDENTIFIER
A4	▲	UVOST BORING LOCATION AND IDENTIFIER

figure 4

UVOST BORING LOCATIONS
TMW-130 LNAPL INVESTIGATION AREA
FORMER FAIRFAX I PLANT
Kansas City, Kansas

12559-04-202080(PRIC010)GN-CO009 JAN 17/2012

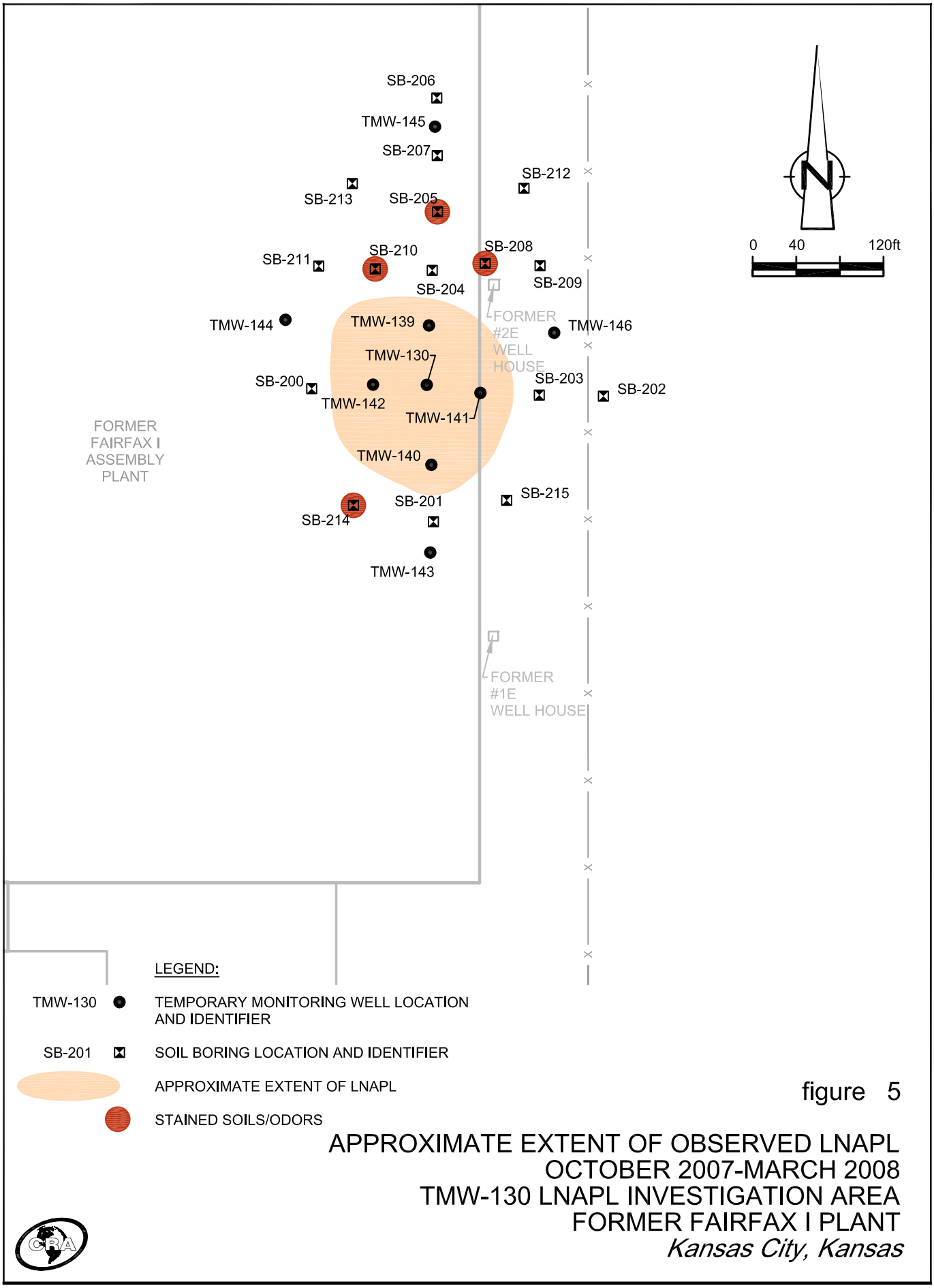


figure 5

APPROXIMATE EXTENT OF OBSERVED LNAPL
OCTOBER 2007-MARCH 2008
TMW-130 LNAPL INVESTIGATION AREA
FORMER FAIRFAX I PLANT
Kansas City, Kansas

12559-04-202080(PRIC010)GN-CO004 JAN 17/2012

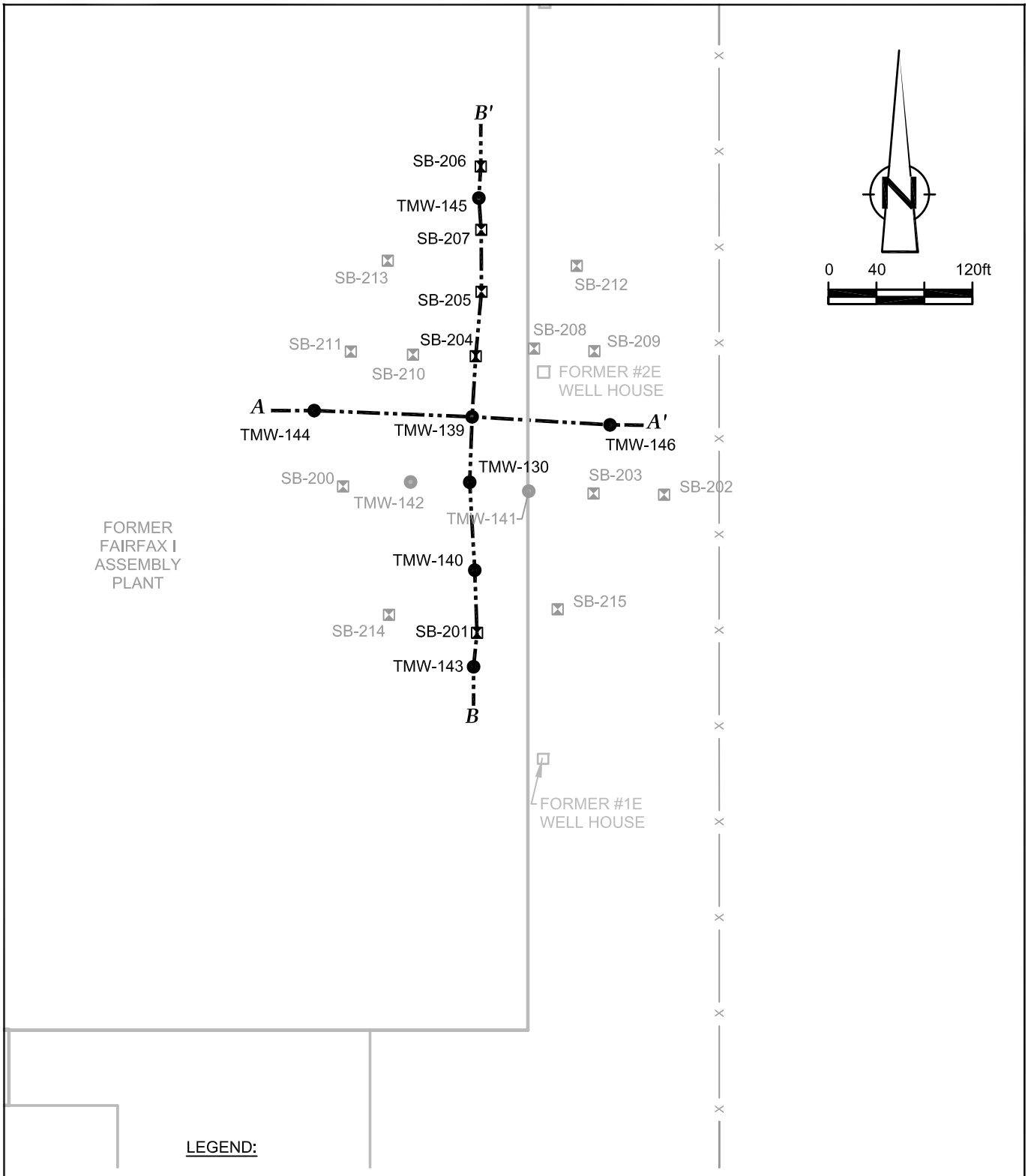
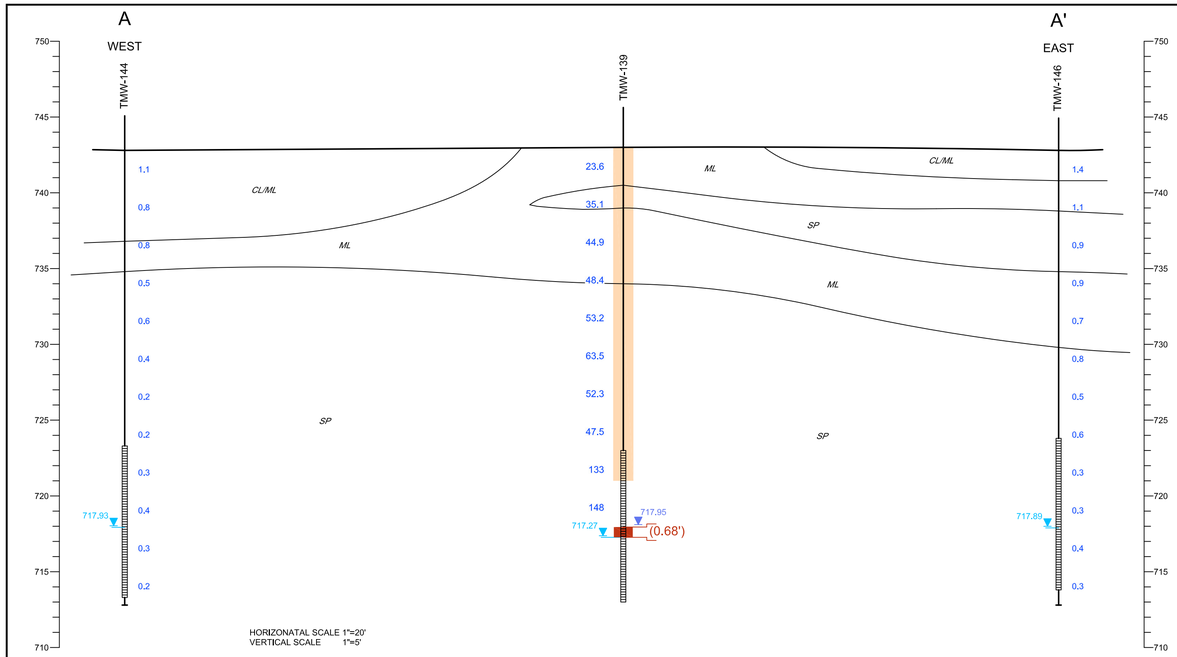
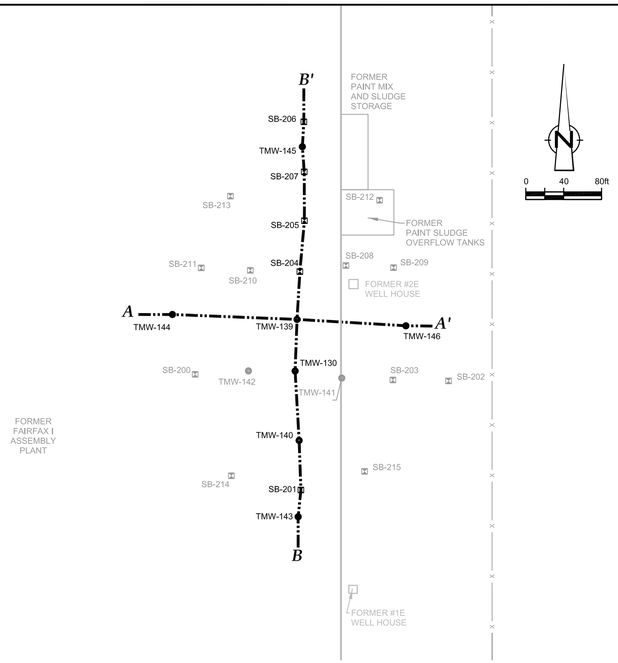
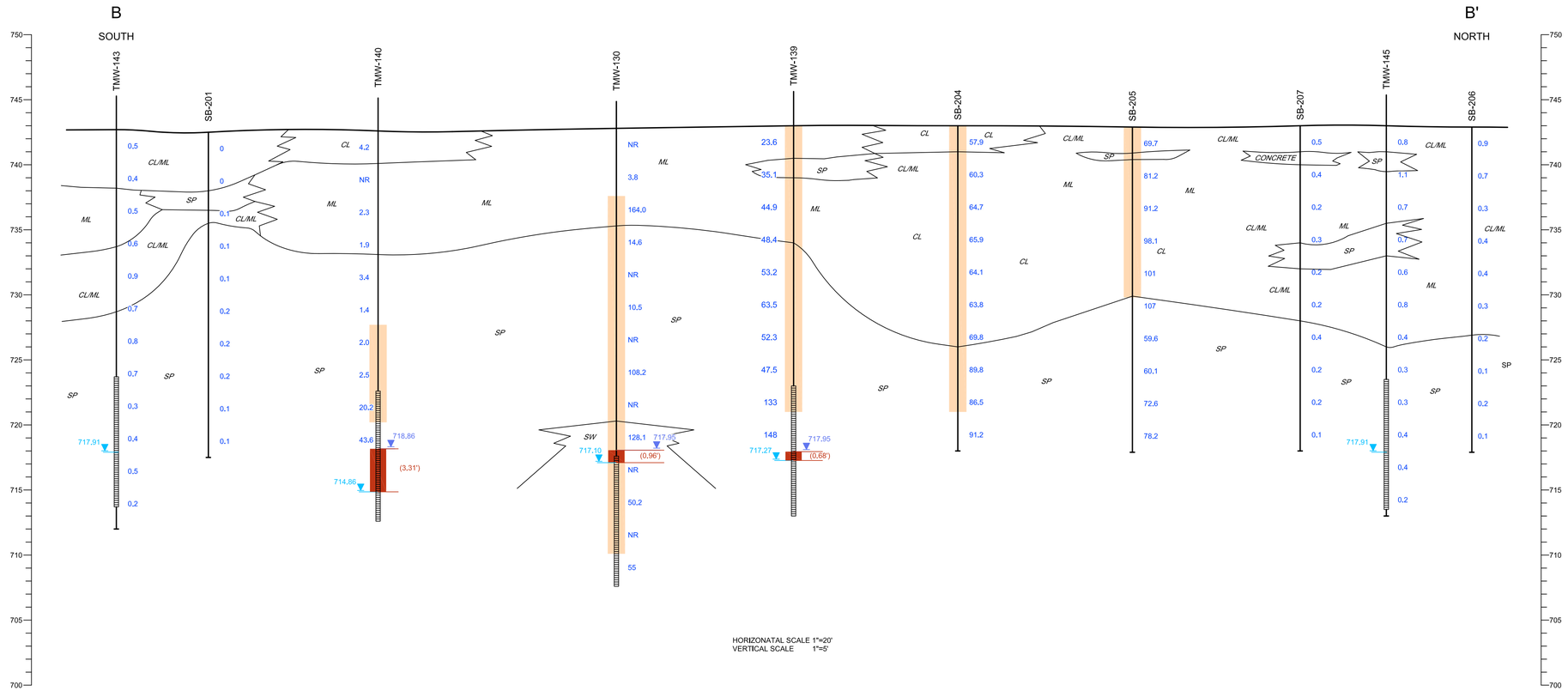


figure 6

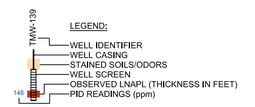
LOCATION OF CROSS SECTIONS
TMW-130 LNAPL INVESTIGATION AREA
FORMER FAIRFAX I PLANT
Kansas City, Kansas







Nº	Revision	Date	Initial



SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

FORMER FAIRFAX I PLANT

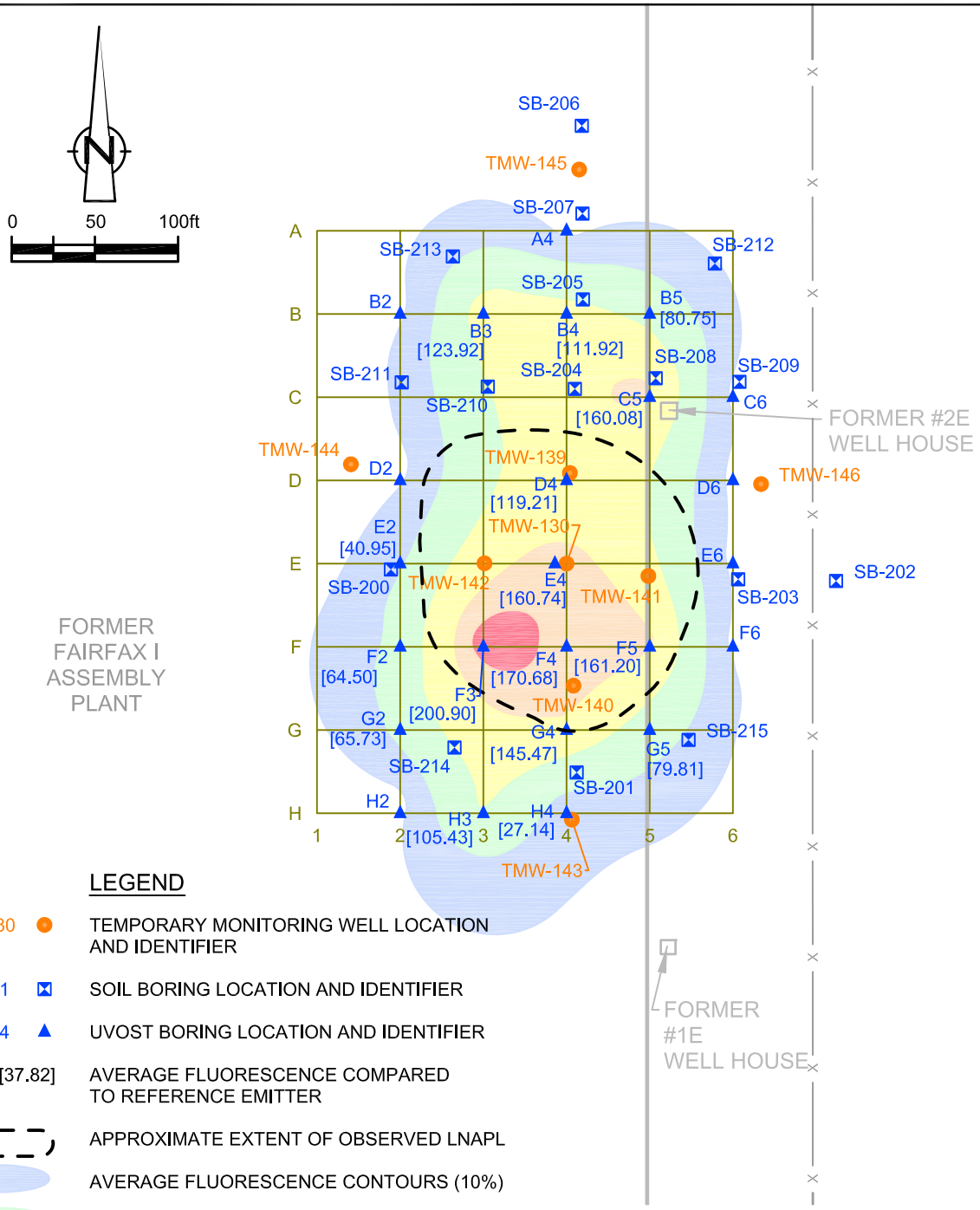
HYDROGEOLOGIC CROSS SECTIONS A-A' & B-B'
TMW-130 LNAPL INVESTIGATION AREA

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
P. HARVEY	J. GREETIS	4/02/08	
Scale: AS SHOWN	Project Nº: 12559-04-202080	Report Nº: PRIC010	Drawing Nº: figure 7

12559-04-202080(PRIC010)GN-CO010 JAN 17/2012



LEGEND

TMW-130	TEMPORARY MONITORING WELL LOCATION AND IDENTIFIER
SB-201	SOIL BORING LOCATION AND IDENTIFIER
A4	UVOST BORING LOCATION AND IDENTIFIER
[37.82]	AVERAGE FLUORESCENCE COMPARED TO REFERENCE EMITTER
	APPROXIMATE EXTENT OF OBSERVED LNAPL
	AVERAGE FLUORESCENCE CONTOURS (10%)
	AVERAGE FLUORESCENCE CONTOURS (50%)
	AVERAGE FLUORESCENCE CONTOURS (100%)
	AVERAGE FLUORESCENCE CONTOURS (150%)
	AVERAGE FLUORESCENCE CONTOURS (180%)

NOTE: AVERAGE FLUORESCENCE BY USING AN INTERVAL OF ONE OR MORE FEET ABOVE AND BELOW THE MAXIMUM UVOST FLUORESCENCE

figure 8

AVERAGE UVOST FLUORESCENCE
TMW-130 LNAPL INVESTIGATION AREA
FORMER FAIRFAX I PLANT
Kansas City, Kansas

TABLE 1

SUMMARY OF TEMPORARY MONITORING WELL DEVELOPMENT PARAMETERS
FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

Location	*Date*	*Well Volume (Gallons)*	*Volume Removed (Gallons)*	*pH (Standard Units)*	*Conductivity (µS)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Other*
TMW-139	10/18/07	1.3	13	Parameters not measured due to the presence of LNAPL.				
TMW-140	10/18/07	1.3	13	Parameters not measured due to the presence of LNAPL.				
TMW-141	10/18/07	1.3	13	Parameters not measured due to the presence of LNAPL.				
TMW-142	10/18/07	1.3	13	Parameters not measured due to the presence of LNAPL.				
TMW-143	10/31/07	1.3	5.0	6.91	946	15.3	170	Cloudy, brown
			7.5	6.74	967	15.3	40	Slightly cloudy
			10.0	6.66	983	15.3	21	Clear
			12.5	6.64	994	15.3	13	Clear
			15.0	6.62	1,002	15.3	11	Clear
TMW-144	10/31/07	1.4	5.0	6.68	984	15.2	180	Slightly cloudy
			7.5	6.67	998	15.2	39	Clear
			10.0	6.70	1,008	15.2	20	Clear
			12.5	6.72	1,009	15.3	15	Clear
			15.0	6.72	1,010	15.3	12	Clear
TMW-145	11/1/07	1.2	5.0	7.22	917	15.0	450	Cloudy, brown
			10.0	6.81	943	15.1	45	Slightly cloudy
			12.5	6.75	953	15.1	18	Clear
			15.0	6.74	957	15.1	15	Clear
TMW-146	11/1/07	1.6	5.0	7.33	1,115	15.1	170	Cloudy, brown
			10.0	7.02	1,114	15.2	38	Slightly cloudy
			12.5	6.97	1,131	15.3	24	Clear
			15.0	6.95	1,137	15.3	17	Clear
			17.5	6.92	1,143	15.3	13	Clear

[1] µS/cm - microsiemens per centimeter

[2] NTU - nephelometric turbidity units

TABLE 2

LNAPL GAUGING
FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

Well ID	*Date*	*Top of Casing Elevation (ft AMSL)* [1]	*Depth to Water (ft BTOC)* [2]	*Depth to LNAPL* [3] *(ft BTOC)*	*LNAPL Thickness (feet)*	*Groundwater Elevation (ft AMSL)*
TMW-130	10/18/2007	744.86	NM[4]	NM	--[5]	NM
TMW-130	10/19/2007	744.86	NM	NM	--	NM
TMW-130	10/23/2007	744.86	23.17	23.14	0.03	721.69
TMW-130	11/1/2007	744.86	22.49	trace	--	722.37
TMW-130	11/7/2007	744.86	22.78	22.76	0.02	722.08
TMW-130	11/13/2007	744.86	23.21	23.19	0.02	721.65
TMW-130	11/20/2007	744.86	23.78	23.77	0.01	721.08
TMW-130	11/29/2007	744.86	25.54	--	--	719.32
TMW-130	12/3/2007	744.86	24.80	24.79	0.01	720.06
TMW-130	2/6/2008	744.86	27.30	26.71	0.59	717.56
TMW-130	2/28/2008	744.86	27.76	26.80	0.96	717.10
TMW-130	3/10/2008	744.86	26.32	25.79	0.53	718.54
TMW-139	10/18/2007	745.63	24.74	trace	--	720.89
TMW-139	10/19/2007	745.63	24.75	24.74	0.01	720.88
TMW-139	10/23/2007	745.63	23.94	--	--	721.69
TMW-139	11/1/2007	745.63	23.30	trace	--	722.33
TMW-139	11/7/2007	745.63	23.61	--	--	722.02
TMW-139	11/13/2007	745.63	24.06	24.05	0.01	721.57
TMW-139	11/20/2007	745.63	24.70	24.64	0.06	720.93
TMW-139	11/29/2007	745.63	25.49	25.40	0.09	720.14
TMW-139	12/3/2007	745.63	25.68	--	--	719.95
TMW-139	2/6/2008	745.63	28.71	27.52	1.19	716.92
TMW-139	2/28/2008	745.63	28.36	27.68	0.68	717.27
TMW-139	3/10/2008	745.63	26.74	26.62	0.12	718.89
TMW-140	10/18/2007	745.13	24.65	24.35	0.30	720.48
TMW-140	10/19/2007	745.13	24.62	24.36	0.26	720.51
TMW-140	10/23/2007	745.13	23.65	23.60	0.05	721.48
TMW-140	11/1/2007	745.13	23.72	22.79	0.93	721.41
TMW-140	11/7/2007	745.13	24.09	23.04	1.05	721.04
TMW-140	11/13/2007	745.13	24.45	23.43	1.02	720.68
TMW-140	11/20/2007	745.13	25.32	23.95	1.37	719.81
TMW-140	11/29/2007	745.13	26.52	24.68	1.84	718.61
TMW-140	12/3/2007	745.13	25.45	25.06	0.39	719.68
TMW-140	2/6/2008	745.13	30.05	26.80	3.25	715.08
TMW-140	2/28/2008	745.13	30.27	26.96	3.31	714.86
TMW-140	3/10/2008	745.13	26.25	--	--	718.88
TMW-141	10/18/2007	745.39	24.55	--	--	720.84
TMW-141	10/19/2007	745.39	24.55	trace	--	720.84
TMW-141	10/23/2007	745.39	23.80	--	--	721.59
TMW-141	11/1/2007	745.39	23.09	trace	--	722.30

TABLE 2

LNAPL GAUGING
FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

Well ID	*Date*	*Top of Casing Elevation (ft AMSL)* [1]	*Depth to Water (ft BTOC)* [2]	*Depth to LNAPL* [3] *(ft BTOC)*	*LNAPL Thickness (feet)*	*Groundwater Elevation (ft AMSL)*
TMW-141	11/7/2007	745.39	23.38	sheen	--	722.01
TMW-141	11/13/2007	745.39	23.81	23.77	0.04	721.58
TMW-141	11/20/2007	745.39	24.41	24.33	0.08	720.98
TMW-141	11/29/2007	745.39	26.10	25.01	1.09	719.29
TMW-141	12/3/2007	745.39	25.47	25.36	0.11	719.92
TMW-141	2/6/2008	745.39	28.82	27.22	1.60	716.57
TMW-141	2/28/2008	745.39	29.16	27.32	1.84	716.23
TMW-141	3/10/2008	745.39	26.42	--	--	718.97
TMW-142	10/18/2007	744.93	24.09	--	--	720.84
TMW-142	10/19/2007	744.93	24.09	trace	--	720.84
TMW-142	10/23/2007	744.93	23.30	--	--	721.63
TMW-142	11/1/2007	744.93	22.60	trace	--	722.33
TMW-142	11/7/2007	744.93	23.79	22.86	0.93	721.14
TMW-142	11/13/2007	744.93	24.16	23.26	0.90	720.77
TMW-142	11/20/2007	744.93	24.15	23.88	0.27	720.78
TMW-142	11/29/2007	744.93	24.78	24.71	0.07	720.15
TMW-142	12/3/2007	744.93	24.97	24.95	0.02	719.96
TMW-142	2/6/2008	744.93	27.27	26.86	0.41	717.66
TMW-142	2/28/2008	744.93	27.49	26.96	0.53	717.44
TMW-142	3/10/2008	744.93	25.56	--	--	719.37
TMW-143	10/18/2007	745.28	NI[6]	--	--	NM
TMW-143	10/19/2007	745.28	NI	--	--	NM
TMW-143	10/23/2007	745.28	NI	--	--	NM
TMW-143	11/1/2007	745.28	23.04	--	--	722.24
TMW-143	11/7/2007	745.28	23.31	--	--	721.97
TMW-143	11/13/2007	745.28	23.64	--	--	721.64
TMW-143	11/20/2007	745.28	24.25	--	--	721.03
TMW-143	11/29/2007	745.28	24.96	--	--	720.32
TMW-143	12/3/2007	745.28	25.21	--	--	720.07
TMW-143	2/6/2008	745.28	27.20	--	--	718.08
TMW-143	2/28/2008	745.28	27.37	--	--	717.91
TMW-143	3/10/2008	745.28	26.45	--	--	718.83
TMW-144	10/18/2007	745.08	NI	--	--	NM
TMW-144	10/19/2007	745.08	NI	--	--	NM
TMW-144	10/23/2007	745.08	NI	--	--	NM
TMW-144	11/1/2007	745.08	22.71	--	--	722.37
TMW-144	11/7/2007	745.08	23.10	--	--	721.98
TMW-144	11/13/2007	745.08	23.50	--	--	721.58
TMW-144	11/20/2007	745.08	24.12	--	--	720.96
TMW-144	11/29/2007	745.08	25.90	--	--	719.18

TABLE 2

LNAPL GAUGING
FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

Well ID	*Date*	*Top of Casing Elevation (ft AMSL)* [1]	*Depth to Water (ft BTOC)* [2]	*Depth to LNAPL* [3] *(ft BTOC)*	*LNAPL Thickness (feet)*	*Groundwater Elevation (ft AMSL)*
TMW-144	12/3/2007	745.08	25.16	--	--	719.92
TMW-144	2/6/2008	745.08	27.05	--	--	718.03
TMW-144	2/28/2008	745.08	27.15	--	--	717.93
TMW-144	3/10/2008	745.08	26.05	--	--	719.03
TMW-145	10/18/2007	745.36	NI	--	--	NM
TMW-145	10/19/2007	745.36	NI	--	--	NM
TMW-145	10/23/2007	745.36	NI	--	--	NM
TMW-145	11/1/2007	745.36	22.95	--	--	722.41
TMW-145	11/7/2007	745.36	23.39	--	--	721.97
TMW-145	11/13/2007	745.36	23.83	--	--	721.53
TMW-145	11/20/2007	745.36	24.50	--	--	720.86
TMW-145	11/29/2007	745.36	25.33	--	--	720.03
TMW-145	12/3/2007	745.36	25.55	--	--	719.81
TMW-145	2/6/2008	745.36	27.41	--	--	717.95
TMW-145	2/28/2008	745.36	27.45	--	--	717.91
TMW-145	3/10/2008	745.36	26.16	--	--	719.20
TMW-146	10/18/2007	744.93	NI	--	--	NM
TMW-146	10/19/2007	744.93	NI	--	--	NM
TMW-146	10/23/2007	744.93	NI	--	--	NM
TMW-146	11/1/2007	744.93	22.63	--	--	722.30
TMW-146	11/7/2007	744.93	22.94	--	--	721.99
TMW-146	11/13/2007	744.93	23.36	--	--	721.57
TMW-146	11/20/2007	744.93	23.94	--	--	720.99
TMW-146	11/29/2007	744.93	24.71	--	--	720.22
TMW-146	12/3/2007	744.93	24.97	--	--	719.96
TMW-146	2/6/2008	744.93	26.93	--	--	718.00
TMW-146	2/28/2008	744.93	27.04	--	--	717.89
TMW-146	3/10/2008	744.93	25.98	--	--	718.95

[1] ft AMSL - feet above mean sea level
[2] ft BTOC - feet below top of casing
[3] LNAPL - light non-aqueous phase liquid
[4] NM - not measured
[5] -- measurable LNAPL not detected
[6] NI - not installed at this time

TABLE 3

MAXIMUM AND AVERAGE UVOST RESULTS
FORMER FAIRFAX I PLANT
KANSAS CITY, KANSAS

Boring ID	*Max Signal (%RE)*	*Average Signal (%RE)*
A4	10	0
B2	1	0
B3	397	123.93
B4	348	111.92
B5	189	80.75
C5	370	160.09
C6	6	0
D2	7	0
D4/TMW-139	371	119.21
D6	2	0
E2	114	40.95
E4/TMW-130	318	160.75
E6	1	0
F2	173	64.50
F3	358	200.90
F4	329	170.68
F5	387	161.20
F6	2	0
G2	157	65.73
G4	263	145.47
G5	221	79.81
H2	2	0
H3	260	105.43
H4	131	27.14

ATTACHMENT A

STRATIGRAPHIC AND INSTRUMENTATION LOGS

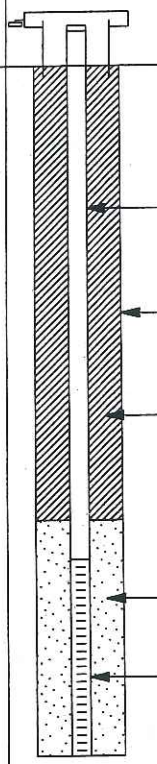
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-130/TMW-130
DATE COMPLETED: November 3, 2006
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: G. CLEMONS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING GROUND SURFACE	744.86 742.80
0	ML-SILT, sandy, poorly sorted, gray	
5	- no sand, crumbles, strong petroleum odor at 5.0ft BGS	
		735.30
10	SP-SAND, fine grained, well sorted, gray, strong petroleum odor - no recovery at 10.0ft BGS	
15	- no recovery at 15.0ft BGS	
20	- medium grained at 20.0ft BGS	
		720.30
25	SW-SAND, medium to coarse grained, poorly sorted, gray, petroleum odor - some fine gravel, wet, strong petroleum odor, some black staining at 25.0ft BGS	
30	- no recovery at 30.0ft BGS	
	- no gravel, no odor, no staining at 32.5ft BGS	
35		707.80
	END OF BOREHOLE @ 35.0ft BGS	
40		
45		
50		
55		
60		
65		

MONITOR WELL



WELL DETAILS
Screened interval:
717.80 to 707.80ft AMSL
25.00 to 35.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.80 to 719.80ft AMSL
0.00 to 23.00ft BGS
Material: Bentonite Chips
Sand Pack:
719.80 to 707.80ft AMSL
23.00 to 35.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE

NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS		0.0		NR
2SS		1.3		3.8
3SS		2.5		164.0
4SS		2.5		14.6
5SS		0.0		NR
6SS		1.3		10.5
7SS		0.0		NR
8SS		1.3		108.2
9SS		1.3		NR
10SS		1.3		128.1
11SS		0.0		NR
12SS		1.3		50.2
13SS		0.0		NR
14SS		0.3		55

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval)

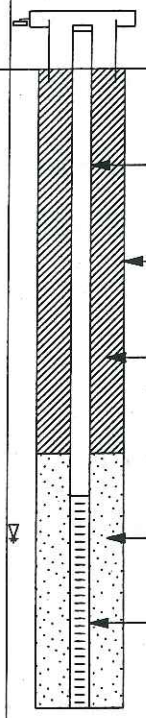
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-139
DATE COMPLETED: October 15, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.63
	GROUND SURFACE	743.00
0	ML SILT, gray, odor	
		740.50
	SP SAND, fine grained, gray, odor	739.00
5	ML SILT, gray, odor - clayey from 6.0 to 7.0ft BGS	
		734.00
10	SP SAND, fine grained, gray, odor	
15		
20	- wet at 22.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	713.00
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
723.00 to 713.00ft AMSL
20.00 to 30.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
743.00 to 725.00ft AMSL
0.00 to 18.00ft BGS
Material: Bentonite Chips
Sand Pack:
725.00 to 713.00ft AMSL
18.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE

NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				23.6
2SS				35.1
3SS				44.9
4SS				48.4
5SS				53.2
6SS				63.5
7SS				52.3
8SS				47.5
9SS				133
10SS				148

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/15/07

OVERBURDEN LOG 12559 MW.GPJ CRA_CORP.GDT 5/22/08

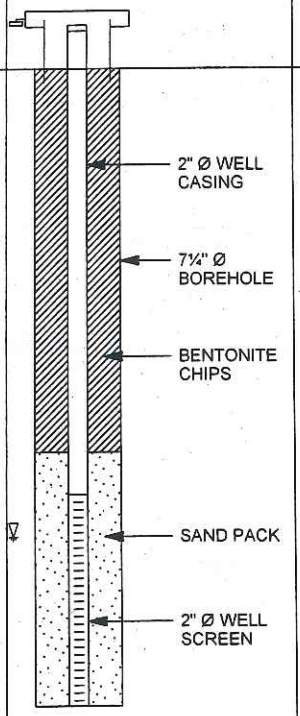
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-140
DATE COMPLETED: October 15, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.13
	GROUND SURFACE	742.60
0	CL CLAY, silty, dark gray	
		740.10
5	ML SILT, gray/brown	
	- gray at 8.0ft BGS	
		733.10
10	SP SAND, fine grained, gray	
15	- black with gray staining, slight odor at 14.5ft BGS	
20	- wet at 22.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	712.60
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
722.60 to 712.60ft AMSL
20.00 to 30.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.60 to 724.60ft AMSL
0.00 to 18.00ft BGS
Material: Bentonite Chips
Sand Pack:
724.60 to 712.60ft AMSL
18.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE

NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				4.2
2SS				NR
3SS				2.3
4SS				1.9
5SS				3.4
6SS				1.4
7SS				2.0
8SS				2.5
9SS				20.2
10SS				43.6

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/15/07

OVERBURDEN LOG 12559 MW.GPJ CRA_CORP.GDT 5/22/08

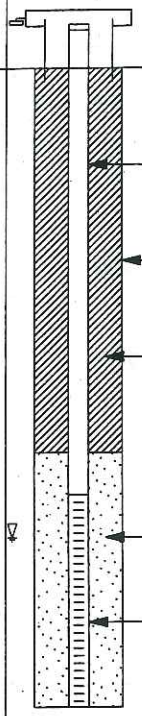
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-141
DATE COMPLETED: October 16, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.39
	GROUND SURFACE	742.30
0	ML/CL SILT/CLAY, brown	740.30
5	ML SILT, brown	736.30
10	ML/CL SILT/CLAY, gray	731.30
15	SP SAND, fine grained, gray, slight odor	
20	- wet at 22.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	712.30
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
722.30 to 712.30ft AMSL
20.00 to 30.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.30 to 724.30ft AMSL
0.00 to 18.00ft BGS
Material: Bentonite Chips
Sand Pack:
724.30 to 712.30ft AMSL
18.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE

NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				0.1
2SS				0.2
3SS				0.1
4SS				1.5
5SS				2.1
6SS				31.3
7SS				45.2
8SS				62.9
9SS				627
10SS				759

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/16/07

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-142
DATE COMPLETED: October 16, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	TOP OF CASING	744.93						
	GROUND SURFACE	742.80						
	ML/CL SILT/CLAY, brown	740.80		1SS				3.6
	GW GRAVEL, coarse grained, gray	740.30		2SS				3.6
	ML SILT, gray			3SS				3.4
5				4SS				3.8
		733.30						
10	SP SAND, fine grained, gray			5SS				16.5
	- slight odor at 12.5ft BGS			6SS				35.2
15				7SS				52.8
				8SS				58.9
20	- strong odor at 20.0ft BGS			9SS				63.1
	- wet at 22.0ft BGS			10SS				69.7
25								
		712.80						
30	END OF BOREHOLE @ 30.0ft BGS							
35								
40								
45								
50								
55								
60								

MONITOR WELL: 2" Ø WELL CASING; 7¼" Ø BOREHOLE; BENTONITE CHIPS; SAND PACK; 2" Ø WELL SCREEN

WELL DETAILS
Screened interval:
722.80 to 712.80ft AMSL
20.00 to 30.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.80 to 724.80ft AMSL
0.00 to 18.00ft BGS
Material: Bentonite Chips
Sand Pack:
724.80 to 712.80ft AMSL
18.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/16/07

OVERBURDEN LOG 12559 MW.GPJ CRA_CORP.GDT 5/22/08

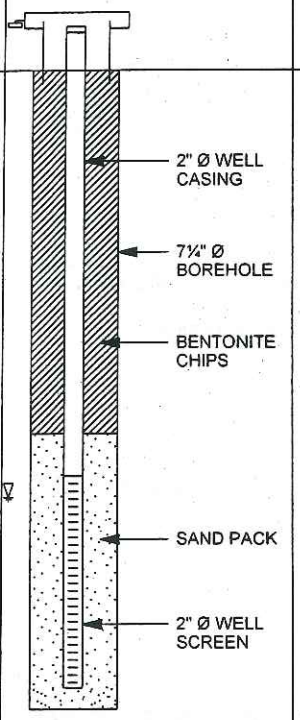
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-143
DATE COMPLETED: October 30, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.28
	GROUND SURFACE	742.70
0	CL/ML CLAY/SILT, brown	
		738.20
5	ML SILT, brown	
		733.70
10	ML/CL SILT/CLAY, brown	
		728.70
15	SP SAND, fine grained, brown	
20	- wet at 20.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	712.70
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
723.70 to 713.70ft AMSL
19.00 to 29.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.70 to 725.70ft AMSL
0.00 to 17.00ft BGS
Material: Bentonite Chips
Sand Pack:
725.70 to 712.70ft AMSL
17.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				0.5
2SS				0.4
3SS				0.5
4SS				0.6
5SS				0.9
6SS				0.7
7SS				0.8
8SS				0.7
9SS				0.3
10SS				0.4
11SS				0.5
12SS				0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/30/07

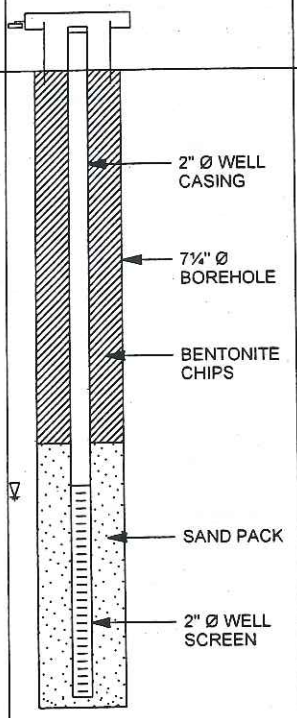
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-144
DATE COMPLETED: October 30, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.08
	GROUND SURFACE	742.80
0	CL/ML CLAY/SILT, brown	
5		736.80
	ML SILT, brown	734.80
10	SP SAND, fine grained, brown	
	- silty from 14.0 to 14.0ft BGS	
15		
20	- wet at 20.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	712.80
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
723.30 to 713.30ft AMSL
19.50 to 29.50ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.80 to 725.30ft AMSL
0.00 to 17.50ft BGS
Material: Bentonite Chips
Sand Pack:
725.30 to 712.80ft AMSL
17.50 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE

NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				1.1
2SS				0.8
3SS				0.8
4SS				0.5
5SS				0.6
6SS				0.4
7SS				0.2
8SS				0.2
9SS				0.3
10SS				0.4
11SS				0.3
12SS				0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/30/07

OVERBURDEN LOG 12559 MW.GPJ CRA_CORP.GDT 5/22/08

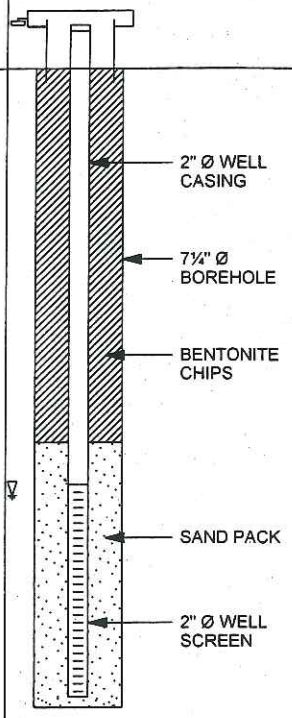
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-145
DATE COMPLETED: October 30, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	745.36
	GROUND SURFACE	743.00
0	CL/ML CLAY/SILT, trace sand, brown	741.00
	SP SAND, fine grained, brown	739.50
5	CL/ML CLAY/SILT, brown	735.50
	SP SAND, fine grained, brown	732.00
10	ML SILT, brown	726.00
15	SP SAND, fine grained, brown	
20	- gray-brown, wet at 20.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	713.00
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
723.50 to 713.50ft AMSL
19.50 to 29.50ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
743.00 to 725.50ft AMSL
0.00 to 17.50ft BGS
Material: Bentonite Chips
Sand Pack:
725.50 to 713.00ft AMSL
17.50 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				0.8
2SS				1.1
3SS				0.7
4SS				0.7
5SS				0.6
6SS				0.8
7SS				0.4
8SS				0.3
9SS				0.3
10SS				0.4
11SS				0.2
12SS				0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/30/07

OVERBURDEN LOG 12559 MW.GPJ CRA_CORP.GDT 5/22/08

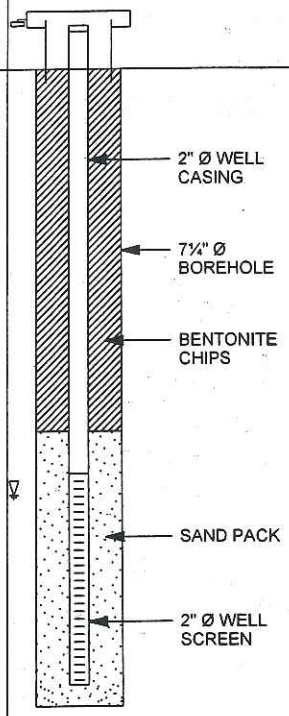
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 12559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: TMW-146
DATE COMPLETED: October 30, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	TOP OF CASING	744.93
	GROUND SURFACE	742.80
0	CL/ML CLAY/SILT, dark brown	740.80
	ML SILT, brown	738.80
5	SP SAND, fine grained, brown	
	ML SILT, brown	734.80
10		
	SP SAND, fine grained, gray	729.80
15		
20	- wet at 20.0ft BGS	
25		
30	END OF BOREHOLE @ 30.0ft BGS	712.80
35		
40		
45		
50		
55		
60		

MONITOR WELL



WELL DETAILS
Screened interval:
723.80 to 713.80ft AMSL
19.00 to 29.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 10
Material: PVC
Seal:
742.80 to 725.80ft AMSL
0.00 to 17.00ft BGS
Material: Bentonite Chips
Sand Pack:
725.80 to 712.80ft AMSL
17.00 to 30.00ft BGS
Material: 10/20 Sand and Native Sand

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1SS				1.4
2SS				1.1
3SS				0.9
4SS				0.9
5SS				0.7
6SS				0.8
7SS				0.5
8SS				0.6
9SS				0.3
10SS				0.3
11SS				0.4
12SS				0.3

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/30/07

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-200
DATE COMPLETED: October 16, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	743.0						
0	CL/ML CLAY/SILT, brown			1				0.5
2				2				0.7
4				3				0.7
6				4				1.3
8	SP SAND, fine grained, gray	735.0		5				1.3
10			Backfilled with cement bentonite grout	6				1.2
12				7				4.1
14	- peaty layer from 15.0 to 16.0ft BGS			8				1.6
16				9				1.7
18				10				1.6
20								
22	- wet at 22.0ft BGS		▽					
24		718.0						
26	END OF BOREHOLE @ 25.0ft BGS							
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/16/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-201
DATE COMPLETED: October 16, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	742.5						
0	CL/ML CLAY/SILT, brown			1				0
2				2				0
4		738.0		3				0.1
	SP SAND, fine grained, light brown	736.5						
6	CL/ML CLAY/SILT, brown	735.5		4				0.1
8	SP SAND, fine grained, brown			5				0.1
10								
12			Backfilled with cement bentonite grout	6				0.2
14				7				0.2
16								
18				8				0.2
20				9				0.1
22	- wet at 22.0ft BGS		▽	10				0.1
24		717.5						
	END OF BOREHOLE @ 25.0ft BGS							
26								
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/16/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-202
DATE COMPLETED: October 17, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.9
2	CL/ML CLAY/SILT, brown	
4	ML SILT, light brown	739.9
6	CL CLAY, some silt, dark brown	737.9
8	SP SAND, fine grained, brown	735.9
10		
12		
14		
16		
18	- gray at 17.0ft BGS	
20		
22	- wet at 22.0ft BGS	
24		
26	END OF BOREHOLE @ 25.0ft BGS	717.9
28		
30		
32		
34		
36		
38		

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				0
2				0
3				0
4				0
5				-
6				0
7				0.1
8				0.1
9				0.2
10				0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/17/07
GRAIN SIZE ANALYSIS ☐

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-203
DATE COMPLETED: October 17, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	742.4						
2	CL CLAY dark brown	740.4		1				0
4	CL/ML CLAY/SILT, brown	738.4		2				0
6	ML SILT, brown	736.4		3				0
8	SP SAND, fine grained, brown	733.4		4				0
10	CL CLAY, silty, brown	729.4		5				0
12			Backfilled with cement bentonite grout	6				0.1
14	SP SAND, fine grained, brown			7				--
16				8				0.3
18				9				0.4
20				10				0.4
22								
24		717.4						
26	END OF BOREHOLE @ 25.0ft BGS							
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

GRAIN SIZE ANALYSIS ☐

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-204
DATE COMPLETED: October 17, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	743.0
0	CL CLAY, dark brown, odor	
2	CL/ML CLAY/SILT, gray, odor	741.0
4	CL CLAY, silty, gray, door	739.0
16		726.0
18	SP SAND, fine grained, gray, odor	
22	- wet at 22.0ft BGS	
24		718.0
26	END OF BOREHOLE @ 25.0ft BGS	

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				57.9
2				60.3
3				64.7
4				65.9
5				64.1
6				63.8
7				69.8
8				89.8
9				86.5
10				91.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/17/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-205
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	742.9						
0	CL/ML CLAY/SILT, trace fine grained sand, brown-gray			1				69.7
2	SP SAND, fine grained, gray, odor	740.9		2				81.2
4	ML SILT, gray, odor	739.4		3				91.2
6								
8	CL CLAY, gray, odor	734.9		4				98.1
10				5				101
12			Backfilled with cement bentonite grout					
14	SP SAND, fine grained, gray	729.9		6				107
16				7				59.6
18				8				60.1
20	- wet at 21.0ft BGS		▽	9				72.6
22				10				78.2
24		717.9						
26	END OF BOREHOLE @ 25.0ft BGS							
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-206
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.9
0	CL/ML CLAY/SILT, trace fine grained sand, brown	
4		738.9
	ML SILT, brown	
6		736.9
	CL/ML CLAY/ SILT, brown	
8		734.4
	ML SILT, brown	
16		726.9
	SP SAND, fine grained, brown	
20	- gray at 20.0ft BGS	
	- wet at 21.0ft BGS	
24		717.9
	END OF BOREHOLE @ 25.0ft BGS	

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				0.9
2				0.7
3				0.3
4				0.4
5				0.4
6				0.3
7				0.2
8				0.1
9				0.2
10				0.1

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-207
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	743.0						
0	CL/ML CLAY/SILT, brown			1				0.5
2	CONCRETE	741.0						
	ML SILT, brown	740.0		2				0.4
4								
6	CL/ML CLAY/SILT, brown	737.0		3				0.2
8				4				0.3
	SP SAND, fine grained, brown	734.0						
10				5				0.2
	CL/ML CLAY/SILT, brown	732.0	Backfilled with cement bentonite grout					
12				6				0.2
14		728.0						
	SP SAND, fine grained, brown			7				0.4
16								
18				8				0.2
20	- wet at 21.0ft BGS		▽	9				0.2
22								
				10				0.1
24		718.0						
	END OF BOREHOLE @ 25.0ft BGS							
26								
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-208
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.6
0	CL/ML CLAY/SILT, trace sand, brown/gray	
4		738.6
	ML SILT, gray	
6		736.6
	CL/ML CLAY/SILT, gray	
12		730.6
	SP SAND, fine grained, gray, odor	
20	- wet at 21.0ft BGS	
24		717.6
	END OF BOREHOLE @ 25.0ft BGS	

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				6.1
2				8.2
3				9.8
4				10.5
5				63.8
6				67.2
7				73.9
8				75.6
9				79.1
10				83.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-209
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.8
0	CL/ML CLAY/SILT, brown/gray	
6		735.8
6	SP SAND, fine grained, brown	
14		728.8
14	SM SAND, silty, fine grained, brown	
16		726.8
16	SP SAND, fine grained, gray	
20	- wet at 21.0ft BGS	
24		717.8
24	END OF BOREHOLE @ 25.0ft BGS	

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				0.9
2				0.9
3				0.9
4				0.8
5				0.5
6				0.4
7				0.6
8				0.4
9				0.3
10				0.3

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-210
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	742.9						
0	CL/ML CLAY/SILT, gray			1				37.6
2	ML SILT, gray, odor	740.9						
4				2				41.3
6				3				48.7
		735.9						
8	SP SAND, fine grained, gray			4				49.2
10				5				51.0
12			Backfilled with cement bentonite grout					
14				6				53.4
16				7				57.6
18				8				61.2
20	- wet at 21.0ft BGS		▽	9				63.3
22								
24				10				64.8
		717.9						
26	END OF BOREHOLE @ 25.0ft BGS							
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-211
DATE COMPLETED: October 29, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	743.0						
0	CL/ML CLAY/SILT, brown			1				0.6
2	ML SILT, brown	741.0		2				0.7
4				3				0.5
6								
8	SP SAND, fine Grained, gray	735.0		4				0.4
10				5				0.4
12			Backfilled with cement bentonite grout	6				0.4
14				7				0.3
16								
18				8				0.4
20	- wet at 21.0ft BGS		▽	9				0.2
22				10				0.3
24	END OF BOREHOLE @ 25.0ft BGS	718.0						
26								
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/29/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-212
DATE COMPLETED: October 30, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.7
0	CL/ML CLAY/SILT, dark brown	
8	SP SAND, fine grained, brown	734.7
10	ML SILT, brown	732.7
14	ML/CL SILT/CLAY, brown	728.7
16	SP SAND, fine grained, brown	726.7
20	- wet at 20.0ft BGS	
24	END OF BOREHOLE @ 25.0ft BGS	717.7

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				0.9
2				1.1
3				0.8
4				0.8
5				0.4
6				0.6
7				0.5
8				0.6
9				0.3
10				0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/30/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-213
DATE COMPLETED: October 31, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	PID (ppm)
	GROUND SURFACE	743.0						
0	CL/ML CLAY/SILT, dark brown			1				0.8
2								
		740.0		2				0.8
4	ML SILT, brown							
		737.0		3				0.8
6	CL/ML CLAY/SILT, brown							
8	- gray at 9.0ft BGS			4				0.5
10				5				0.7
12			Backfilled with cement bentonite grout					
		730.0		6				0.3
14	SP SAND, fine grained, gray							
16				7				0.2
18				8				0.4
20	- wet at 20.0ft BGS		▽	9				0.3
22								
24				10				0.4
		718.0						
26	END OF BOREHOLE @ 25.0ft BGS							
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/31/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-214
DATE COMPLETED: October 31, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	743.0						
0	CL/ML CLAY/SILT, dark brown			1				0.3
2								
4				2				0.3
6		737.0		3				0.1
6	ML SILT, brown							
8	- sand lens from 8.5 to 9.0ft BGS			4				0
10		733.0		5				0
10	SP SAND, fine grained, brown		Backfilled with cement bentonite grout					
12				6				0
14								
16				7				0.2
18				8				0.1
20	- gray, wet at 20.0ft BGS		▽					
20				9				10.7
22	- slight odor at 22.0ft BGS							
24				10				13.3
24	END OF BOREHOLE @ 25.0ft BGS	718.0						
26								
28								
30								
32								
34								
36								
38								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/31/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: FAIRFAX I PLANT SITE
PROJECT NUMBER: 012559
CLIENT: GM
LOCATION: KANSAS CITY, KANSAS
DRILLING CONTRACTOR: JB ENVIRONMENTAL

HOLE DESIGNATION: SB-215
DATE COMPLETED: October 31, 2007
DRILLING METHOD: 3¼ ID HSA
FIELD PERSONNEL: J. HARGENS
DRILLER: J. BIEKER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL
	GROUND SURFACE	742.1
0	CL/ML CLAY/SILT, dark brown	
		740.1
2	ML SILT, brown	
4		
6		
8		733.6
	SP SAND, fine grained, brown	
10		
12		
14		
16		
18		
20	- gray, wet at 20.0ft BGS	
22		
24		717.1
	END OF BOREHOLE @ 25.0ft BGS	
26		
28		
30		
32		
34		
36		
38		

BOREHOLE: Backfilled with cement bentonite grout

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
1				0.3
2				0.5
3				0.2
4				0.2
5				0.3
6				0.1
7				0.2
8				0.1
9				0.2
10				0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ 10/31/07

OVERBURDEN LOG 012559-BH.GPJ CRA_CORP.GDT 5/22/08

ATTACHMENT B

SOIL TECHNOLOGY™ RESULTS

1259

SOIL TECHNOLOGY™
INNOVATIVE SOLUTIONS

RECEIVED
CRA INC
CHICAGO

LETTER OF TRANSMITTAL

TO: **Conestoga-Roves Associates, Inc.**
8615 West Bryn Mawr
Chicago, IL 60631

Date: Dec 20, 2007
Job No.: 07-2231

ATTENTION: **Mr. Phil Harvey**

REFERENCE: **Fairfax Plant Sites I and II**
CRA Project No. 40033

We are sending the following items:

Date	Description
12/20/07	Copy of Invoice No. 42744
12/20/07	Flexible & Rigid Wall Hydraulic Conductivity of Shelby Tube Specimens. (ASTM D-2434) – Table 1
12/20/07	Flexible Wall Hydraulic Conductivity Test Parameters (D-5084) Table 2
12/20/07	Total Volatile Solids (ASTM D-2974) – Table 3
12/20/07	Particle Size Distribution Report (ASTM D-422)- Figure 1
12/20/07	Visual Classification (ASTM D-2488) - Visuals JH-001 and JH-002

These are transmitted for your use.

REMARKS: Testing was done in general accordance with ASTM D-422, D-2488, D-2434, D-5084, D-2974. If you should have any questions regarding the data reported herein please do not hesitate to contact Rick Sheets. We thank you for using Soil Technology's laboratory services and we look forward to working with you on you upcoming projects.

Best regards,
SOIL TECHNOLOGY

Kristin A. Sheets

Kristin A. Sheets,
President

Fairfax Plant Sites I & II
TMW-130 Investigation
CRA Project No. 012559

Flexible & Rigid Wall Hydraulic Conductivity of Shelby Tube Specimens
Table 1

Sample Identification	Sample Depth	Water Content %		Wet Density (Pcf)		Porosity		Saturation[1] %		Hydraulic Conductivity [2] cm/sec
		Before	After	Before	After	Before	After	Before	After	
S-101707-JH-001	11.1-11.4	42	40	111	114	0.52	0.50	1.0	1.0	3×10^{-6}
S-101707-JH-002	16.2-16.6	5	29	96	135	0.46	0.38	0.17	1.0	2×10^{-2}

[1] Specific gravity assumed 2.7
[2] Average Saturated Hydraulic Conductivity Using Tap Water

Flexible Wall Hydraulic Conductivity Test Parameters
Table 2

Sample Identification	Sample Depth (Ft)	Gradient (*i*)	Triaxial Pressure (psi)			Average Effective Confining Stress (psi)
			Cell	HW	TW	
S-101707-JH-001	11.1-11.4	3	38	30	30	8.0

HW = Head Water; TW = Tail Water; i = h/l

Soil Technology
J-07-2231

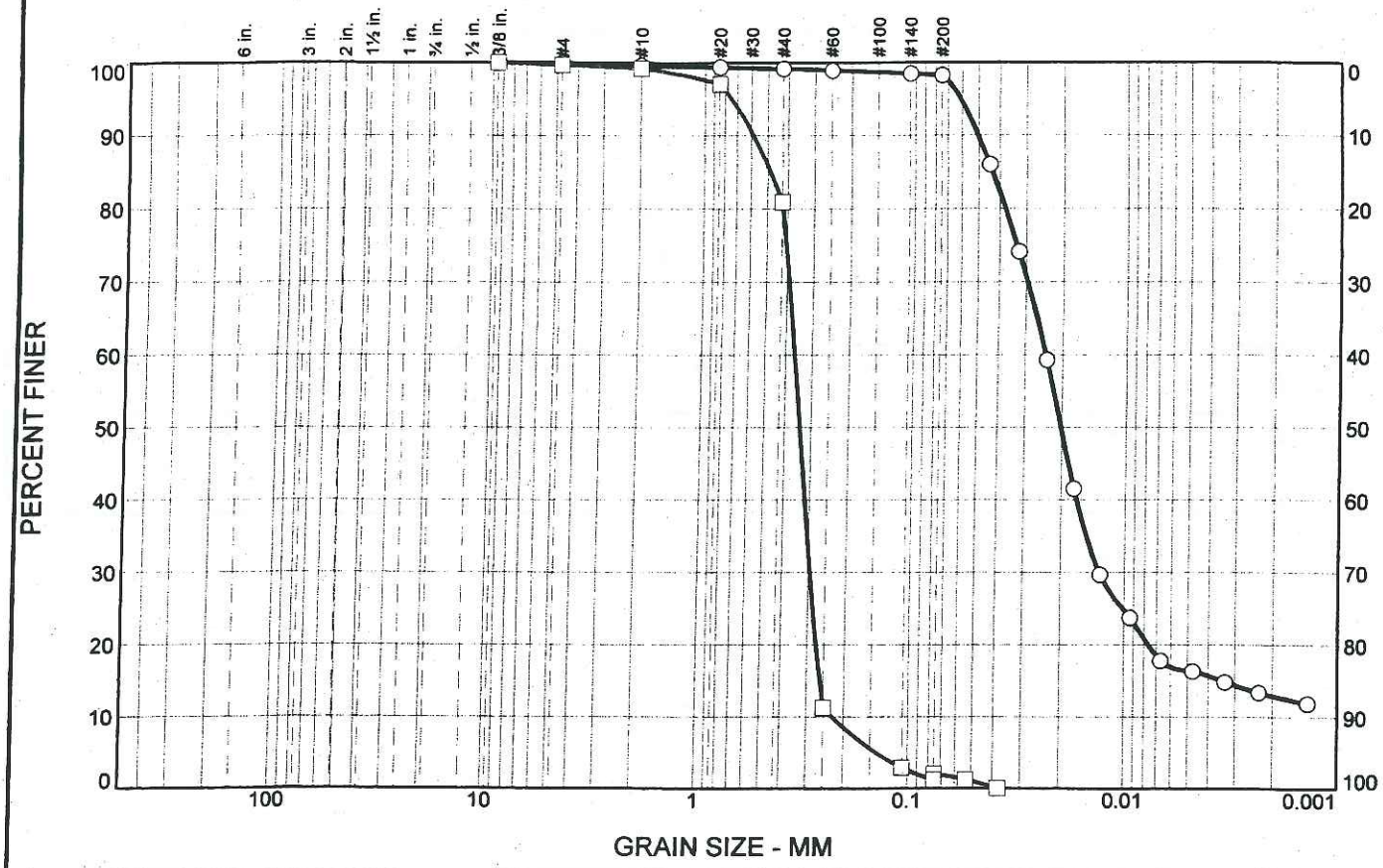
Fairfax Plant Sites 1 and II
Project No.012559
Conestoga – Rovers & Associates

Total Volatile Solids
ASTM D-2974
Table 3

Boring Number	Sample Number	Moisture Content %	Organic Content %
S-101707	JH-001	29	0
S-101707	JH-002	40	4

Testing provided by Soil Technology
Table 3, TVS Data Results

Particle Size Distribution Report



	Cobbles	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.1	1.7	81.8	16.4	ML	A-4(0)	NP	NV
□	0.0	0.3	97.7	2.0	0.0	SP	A-3	NP	NV

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □
.375	100.0	100.0
GRAIN SIZE		
D_{60}	0.0241	0.3613
D_{30}	0.0132	0.2948
D_{10}		0.2269
COEFFICIENTS		
C_c		1.06
C_u		1.59

SIEVE number size	PERCENT FINER ○	PERCENT FINER □
#4	99.9	99.7
#10	99.6	99.2
#20	99.4	97.0
#40	99.2	81.0
#60	98.9	11.2
#140	98.5	2.9
#200	98.2	2.0

USC Classification

○ silt

□ poorly graded sand

REMARKS:

○ After Hydraulic Conductivity 3 x 10-6 cm/sec

□ After Hydraulic Conductivity 2 x 10-2 cm/sec

○ Source of Sample: S-101707 Depth: 11.1-11.4 Sample Number: JH-001

□ Source of Sample: S-101707 Depth: 16.2-16.6 Sample Number: JH-002

SOIL TECHNOLOGY

Bainbridge Island, WA

Client: Conestoga - Rovers & Associates

Project: Fairfax Plant Sites I and II Project No. 012559

Project No.: J-07-2231 Figure 1

Visual Classification of Shelby Tube Sample - ASTM D-2488

Project Name: Fairfax Plant Sites 1 and II
Project No.: 012559
Exploration No: S-101707
Sample No. JH-001
Depth of Sample: 10.0 – 12.5 (feet)
Sampled Length (from log) 2.5 (feet)
Sample Recovery: 1.8 (feet)

Date Visual Performed: October 31, 2007
Soil Technology Job No.: 07-2231
Sample Pushed by: RD
Sample Logged by: RD
Type of Sample: X Shelby or ___other
Diameter of Sample 2.85 (inches)
Sample Quality __good X fair __poor __Disturbed

Specimen saved	Water content (%)	Test Type	Depth (ft)	Core	Classification and Description
			9.5		
			10.0		Top of Recovery
					Gray silty Clay
	23	WC			Tan brown, silty fine Sand
					Brown silty Sand
			10.5		
					Tan brown silty fine Sand
	36	WC			
					Moist
			11.0		
					Gray slightly brown silty Clay
					Permeability test
		K_{20}			TV = .25 TSF, PP = 1.25 TSF
	48	WC	11.5		
			11.8		
					Bottom of Recovery

Testing Services provided by Soil Technology
Visual JH-001

Visual Classification of Shelby Tube Sample - ASTM D-2488

Project Name: Fairfax Plant Sites 1 and II
Project No.: 012559
Exploration No: S-101707
Sample No. JH-002
Depth of Sample: 15.0 – 17.5 (feet)
Sampled Length (from log) 2.5 (feet)
Sample Recovery: 1.3 (feet)

Date Visual Performed: November 1, 2007
Soil Technology Job No.: 07-2231
Sample Pushed by: RD
Sample Logged by: RD
Type of Sample: X Shelby or ___other
Diameter of Sample 2.85 (inches)
Sample Quality X good _fair __poor__Disturbed

Specimen saved	Water content (%)	Test Type	Depth (ft)	Core	Classification and Description
			15.0		
			15.5		
			16.0		Top of Recovery
	50	RW/HC WC	16.5		Rigid Wall Hydraulic Conductivity Tan, medium-fine Sand (throughout sample)
			17.0		
			17.5		Bottom of Recovery

Testing Services provided by Soil Technology
Visual JH-002

ATTACHMENT C

GW/S ENVIRONMENTAL CONSULTING RESULTS

GW/S ENVIRONMENTAL CONSULTING

GENE W. SCHMIDT, CGWP & PHG

Specializing in Forensics of Petroleum Hydrocarbon Contamination of Groundwater and Soils

11619 S. Hudson Place . . . (O) 918-581-3021
Tulsa, OK 74137-8532 . . . (H) 918-298-9845
envirodog@aol.com . . . Fax 918-581-3015

GW/S ENVIRONMENTAL CONSULTING
Facsimile Transmittal Sheet

To: SUSAN SCROCCHI From: Gene W. Schmidt

Phone: 297. 2265 Pages: 7

Fax: 1.716.~~206.0201~~ Date: 10.25.07

cc: _____

Phone _____

Fax Phone _____

Notes/Comments

Susan - could you forward a copy to Phil Harvey - I do not have Phil's current fax number - if you went me to fax him a copy, could you provide me his fax #.

Thanks.

Gene

GW/S ENVIRONMENTAL CONSULTING

GENE W. SCHMIDT, CGWP & PHG

Specializing in Forensics of Petroleum Hydrocarbon Contamination of Groundwater and Soils

11619 S.Hudson Place
Tulsa, OK 74137-8532
envirodog@aol.com

(O) 918-581-3021
(H) 918-298-9849
Fax 918-581-3015

October 25, 2007

Susan Scrocchi
CRA
2371 George Urban Blvd.
Depew, NY 14043

GM Fairfax
Project # 1255A-04-202040

Attached are the gas chromatograms (GC) for the petroleum product sample, P-101807-JH-003, collected from the subject location on 10/18/07 and received by us for our analytical/forensic examination on 10/22/07.

The P-101807-JH-003 sample is entirely a very degraded distillate (diesel/fuel oil) with no other petroleum products present. The C17/Pristane ratio is 0.30 indicating that the distillate was released more than 10 years ago, but probably less than 20 years. When the initial nC17/Pristane) 0 is not known (as in this case), the above estimate of the releases is the best that can be given. However, one can state that the distillate in the sample is not a recent release.

Gene W. Schmidt

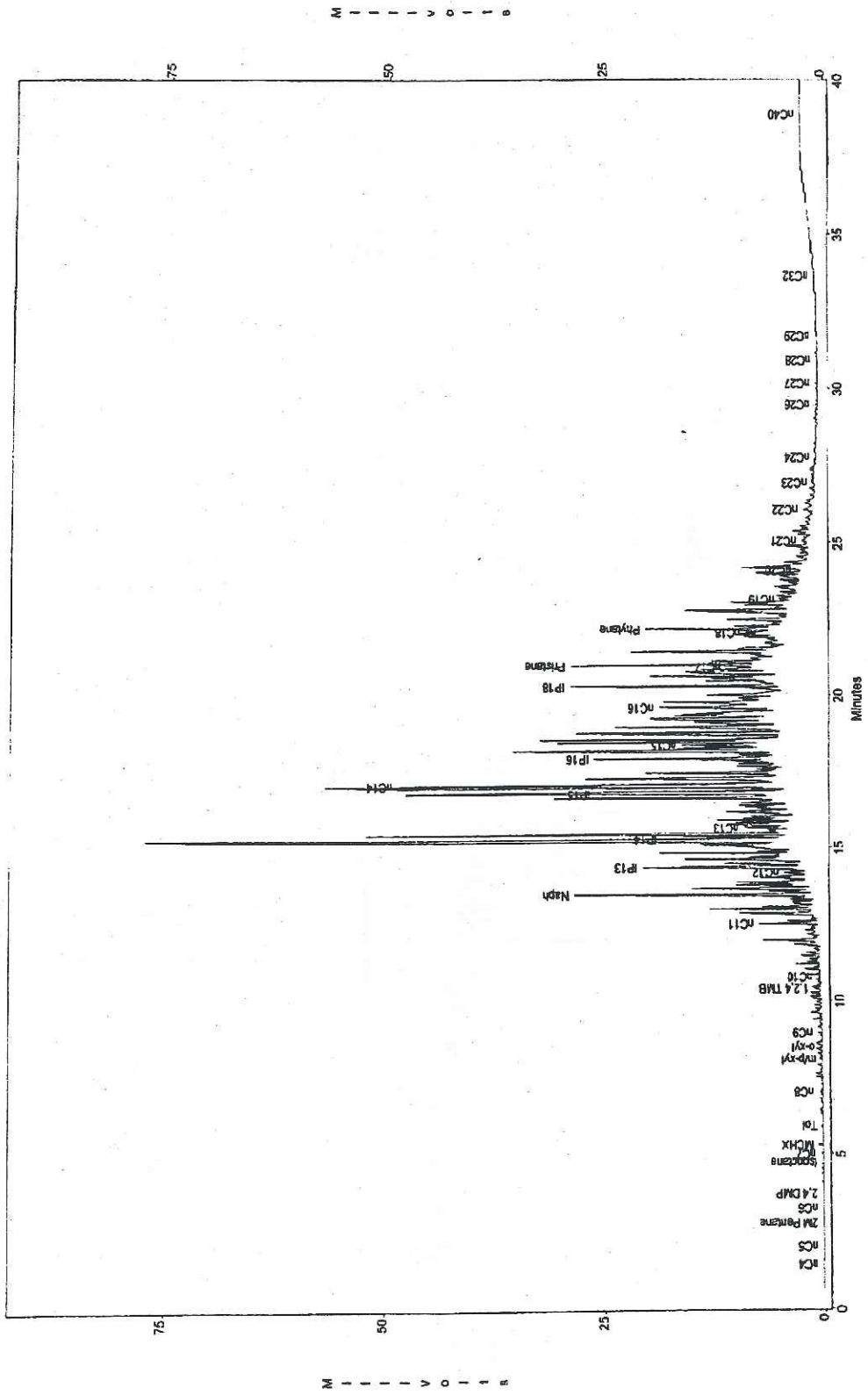
Gene W. Schmidt
GWS/trs

Attachments

Torkelson Geochemistry, Inc.

GM Fairfax
Sample ID : P-101807-JH-003
Acquired : Oct 24, 2007 12:57:24

c:\ezchrom\chrom\07173\jh-003 – Channel A



Torkelson Geochemistry, Inc.

GM Fairfax
Sample ID : P-101807-JH-003
Acquired : Oct 24, 2007 12:57:24

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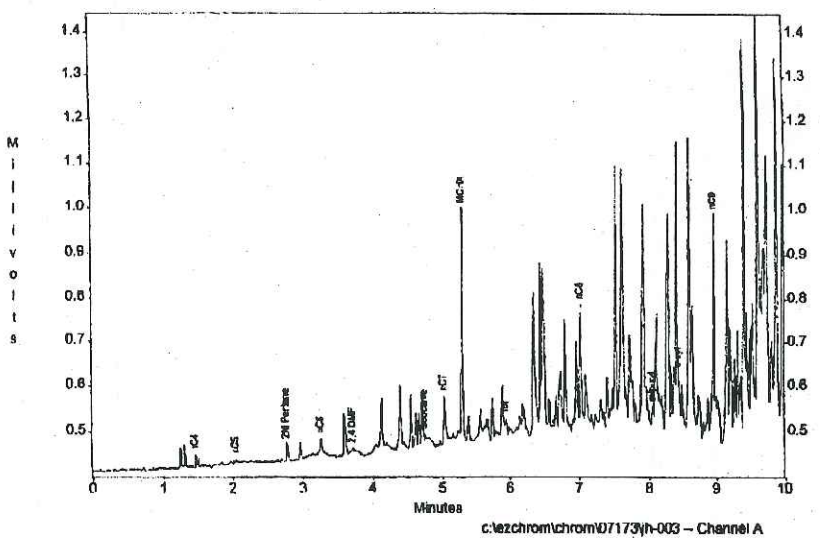

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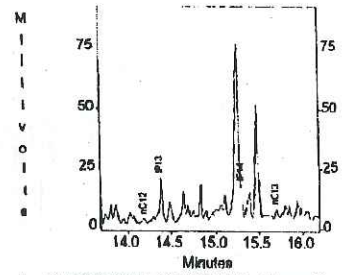

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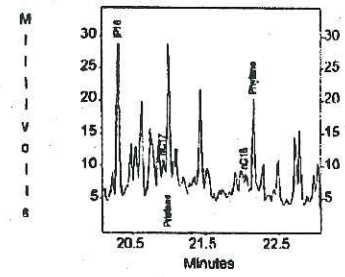

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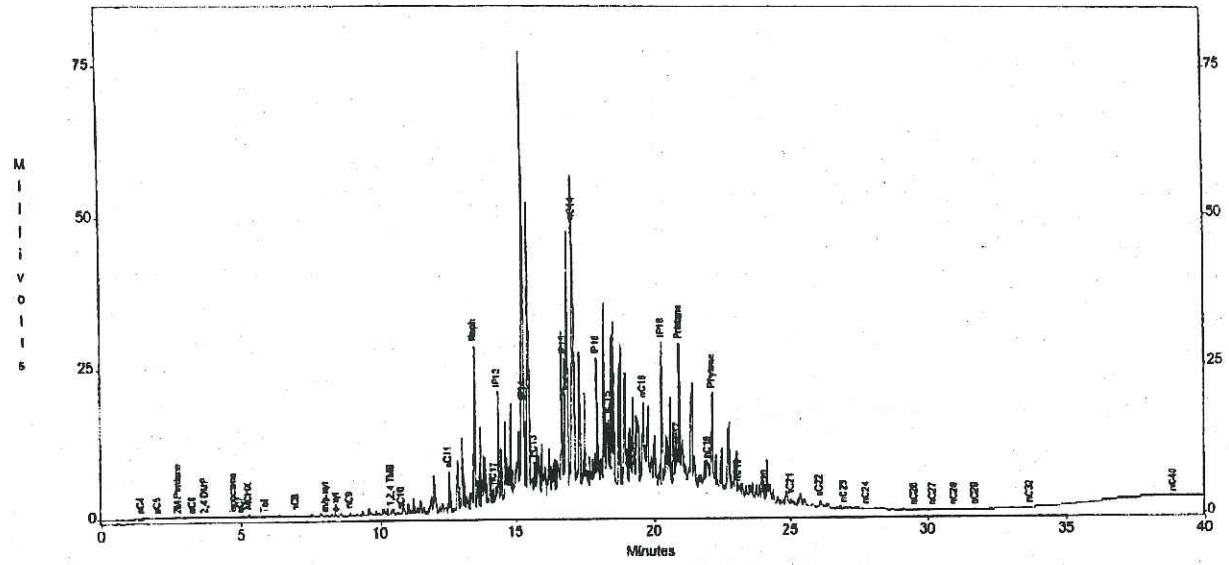


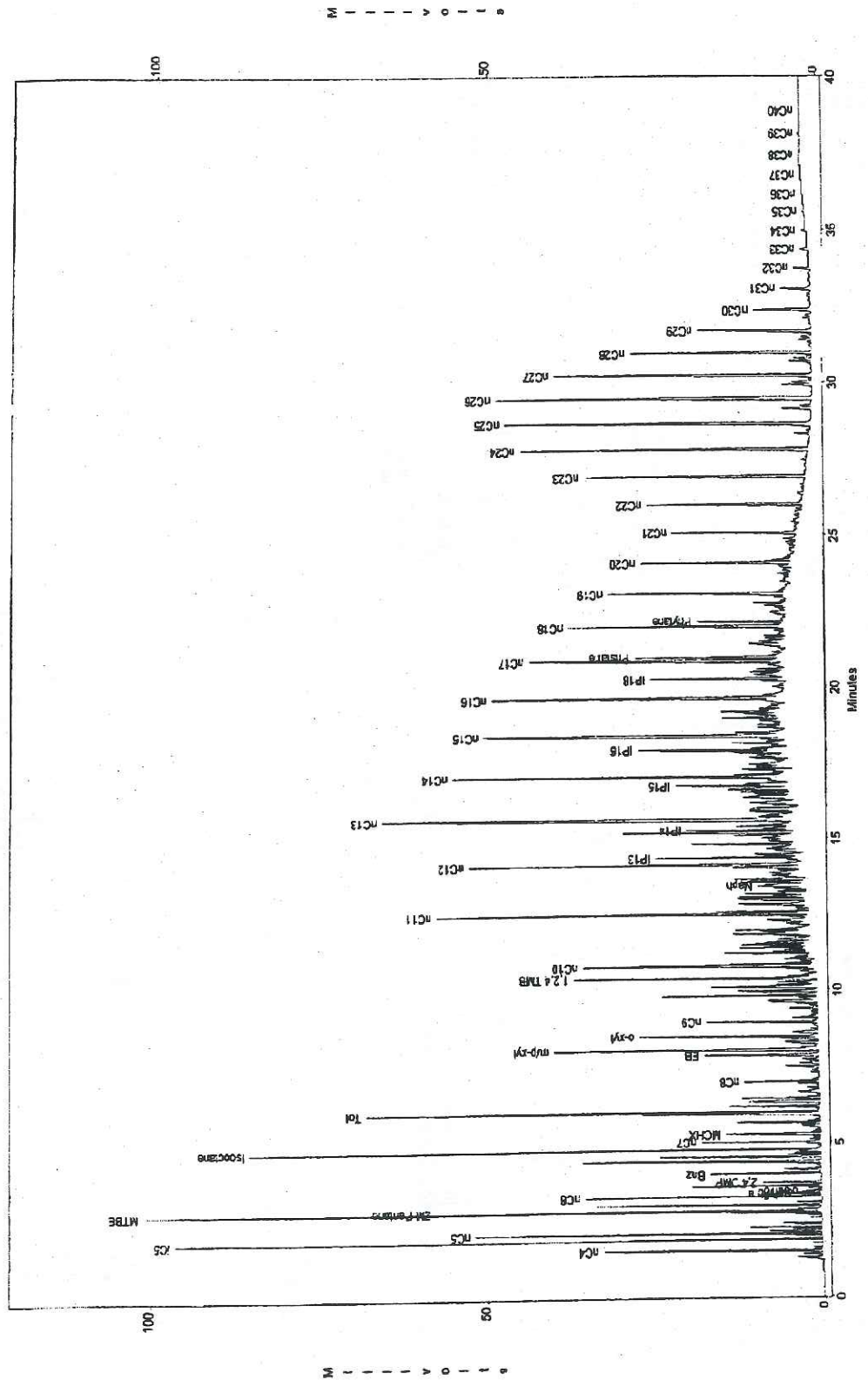
Channel A Results

Peak	Area	Height
nC4	23	37
iC5	0	0
nC5	27	12
MCPen	0	0
2M Pentane	54	31
nC6	82	47
olefin a	0	0
olefin b	0	0
olefin c	0	0
2,4 DMP	23	12
Benz	0	0
Isooctane	12	12
nC7	183	104
MCHX	691	522
Tol	58	33
nC8	545	392
EB	0	0
m/p xyl	196	70
o-xyl	218	156
nC9	921	548
1,2,4 TMB	1169	711
nC10	814	260
nC11	10720	6355
Naph	64874	37260
nC12	4686	2696
IP13	40441	18770
IP14	13121	15700
nC13	13694	5880
IP15	40806	21747
nC14	81678	43640
IP16	52641	23531
nC15	26456	11710
nC16	51138	14831
IP18	65743	25299
nC17	24916	7666
Pristane	67890	25545
nC18	19296	5943
Phytane	58970	17612
nC19	7683	2491
nC20	2553	1100
nC21	3087	899
nC22	3226	1169
nC23	902	275
nC24	693	73
nC25	0	0
nC26	229	65
nC27	239	60
nC28	75	32
nC29	66	17
nC30	0	0
nC31	0	0
nC32	106	15
nC33	0	0
nC34	0	0
nC35	0	0
nC36	0	0
nC37	0	0
nC38	0	0
nC39	0	0
nC40	93	11

Torkelson Geochemistry, Inc.

GM Fairfax
Sample ID : Gas/Dies/Wax std
Acquired : Oct 24, 2007 13:46:43

c:\ezchrom\chrom\07173\gasdiswax2 -- Channel A



Torkelson Geochemistry, Inc.

GM Fairfax
Sample ID : Gas/Dies/Wax std
Acquired : Oct 24, 2007 13:46:43

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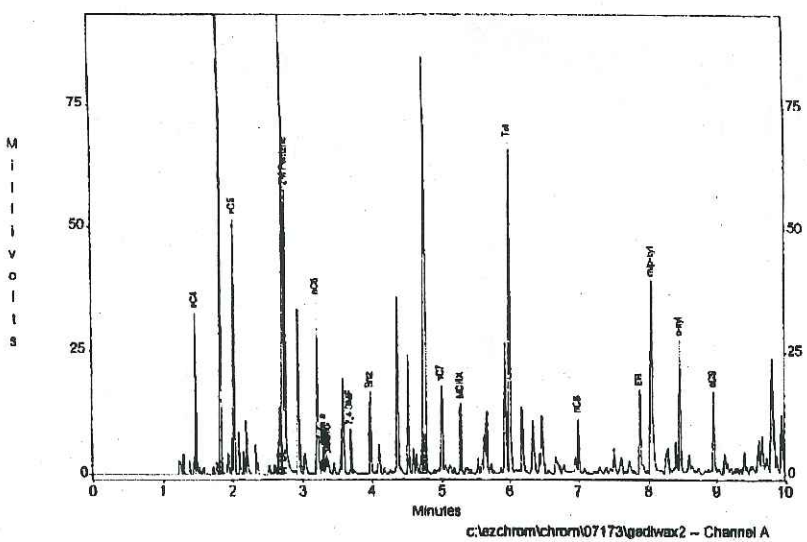
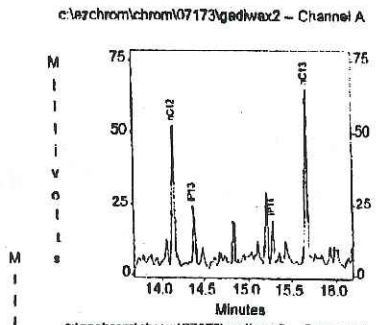
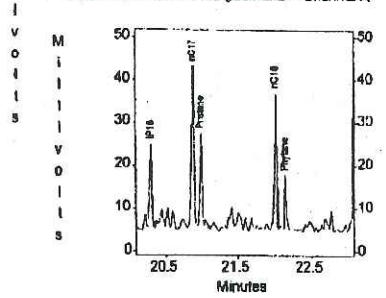
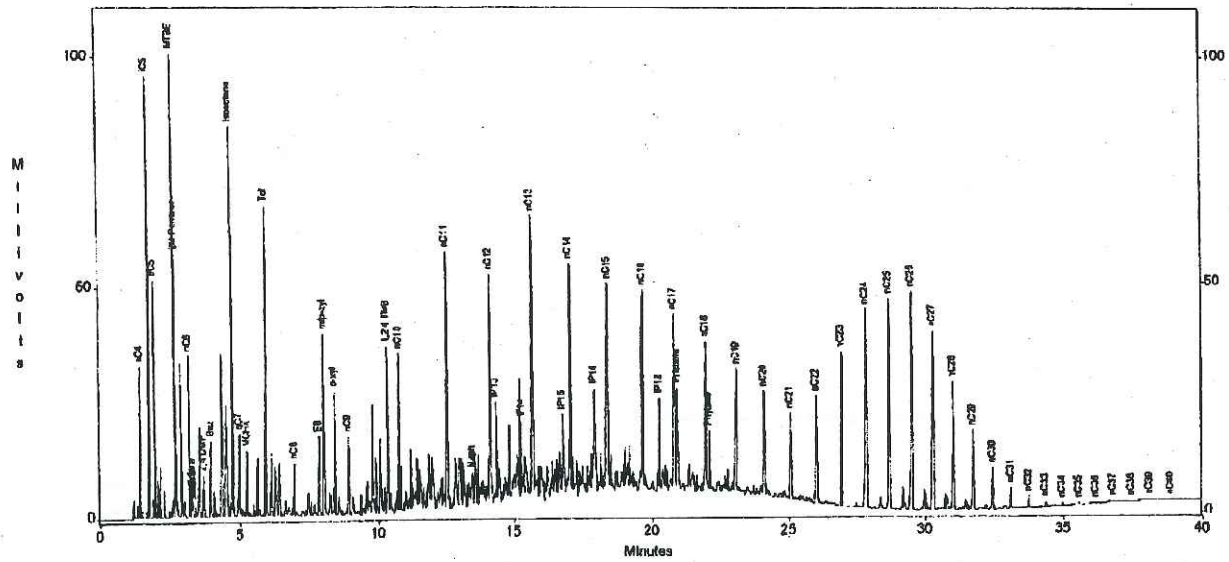




c:\ezchrom\chrom\07173\gadiwax2 -- Channel A



c:\ezchrom\chrom\07173\gadiwax2 -- Channel A



Channel A Results

Peak	Area	Height
nC4	20370	32693
iC5	66563	95936
nC5	37754	51612
MTBE	83754	100642
2M Pentane	51679	57186
nC6	33503	35195
olefin a	5471	5057
olefin b	3865	3715
olefin c	3306	2837
2,4 DMP	9085	9003
Benz	22455	16558
Isooctane	187463	84702
nC7	21993	17965
MCHX	17116	14108
Tol	95110	67349
nC8	23025	21389
EB	24050	17134
m/p-xyl	84066	32469
o-xyl	39796	24935
nC9	23174	16835
1,2,4 TMB	82789	36267
nC10	52604	34721
nC11	97547	55804
Naph	15996	7282
nC12	92614	50283
IP13	74056	32273
IP14	29578	17317
nC13	126231	62685
IP15	31082	18523
nC14	115701	51581
IP16	63099	23701
nC15	126130	46595
nC16	105130	34936
IP18	46555	20900
nC17	90960	38025
Pristane	91357	23062
nC18	71930	32414
Phytane	28224	13265
nC19	98246	27369
nC20	63209	23108
nC21	37787	19007
nC22	45041	23460
nC23	71930	32630
nC24	108211	43366
nC25	128367	46129
nC26	131336	47751
nC27	108342	38887
nC28	63105	27501
nC29	34985	17159
nC30	18270	8515
nC31	8342	4400
nC32	4238	2247
nC33	2249	1233
nC34	1218	638
nC35	665	312
nC36	361	141
nC37	524	73
nC38	317	33
nC39	246	26
nC40	14	16

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PAGE | OF

ID # N° 00765

SSOW Ref. Code E95006

Required Client Information:

Company: CRA	Report To: Susan Scrocchi	Laboratory: Test America Geochemistry Inc.	
Address: 2371 George Urban Blvd. Depew N.Y. 14043	Copy To: Phil Harvey	Laboratory Location: Tulsa OK Lyon's	
	Invoice To:	Laboratory Contact: Gene Schmidt	
	P.O.:	Requested Due Date:	TAT: 5 Fan
Phone: 716-2060202	Project Name: GM Fairfax	QA/QC Requirements: none	
Fax: 716-206-0201	Project Number: 125511-04-202040		
E-mail: SSCRocchi@CRAworld.com			

Valid Matrix Codes: WG Groundwater; WB Borehole Water; WS Surface Water; SO Soil; SE Sediment; See Back for Additional Codes

Analysis and Method

Sample Identification:	Matrix Code	Date Collected	Time Collected	# Containers	Preservative: Unpreserved	HCl	H2SO4	HNO3	NaOH	Other:	Lab# Type Any														Remarks/Lab ID
1. P-101807-JH-003	GWAB	10/18/07	1450	1	V						X														
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
12.																									
13.																									
14.																									
15.																									
TOTAL NUMBER OF CONTAINERS				1																					

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
Fed-X	1	Ryan O'Hanlon / CRA	10/18/07	1700	Bruce Tabulson	10-22-07	1130
AIRBILL NO. 8632 0261 3398							

Sample Condition

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

Sampler Name:

Sampler Signature: Date:

Distribution: WHITE - Fully Executed Copy YELLOW - Receiving Laboratory Copy PINK - Sampler Copy

REV. 05/03

ATTACHMENT D

UVOST RESULTS

MATRIX
ENVIRONMENTAL LLC

8631 Jefferson Highway
Osseo, MN 55369
763-424-4803
FAX: 763-424-9452

PROJECT NO: 12559
ORIGINATOR: J. Sweeks
DATE: 3/26/08
☐ CORRESPONDENCE FILE
☐ ENGINEERING FEES FILE
☐ VENDOR FILE
☐ OUT-OF-OFFICE REPORTS FILE
☐ FIELD FILE
☒ DATA - UVOST
MAR 2 6 2008

-Direct Sensing Report – UVOST

Client:	**CRA, Inc.**
Project Name:	**GM Plant**
Location:	**Kansas City, KS**
Project Number:	**009-MNDS-08UV**

The analysis and opinions expressed in this report are based upon data obtained from the samples collected at the indicated locations and from other information discussed in this report. Exceptions, if any, are discussed in the accompanying sample comments. This report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted practices. Reported results shall not be reproduced, except in full, without written approval of the lab. The sample results relate only to the analytes of interest tested. No warranties, expressed or implied are intended or made.

I certify that the data contained in this final report has been generated and reviewed in accordance with approved methods and our Standard Operating Procedure. Release of this final report is authorized by Laboratory management, which is verified by the following signature.

James D. Zachary
Approval Signature

3/7/08
Date

SYSTEM EXPLAINATION
ON-SITE CHEMICAL ANALYSIS

Fluorescence is a property of some compounds where absorbed UV light stimulates the release of photons (light) of a longer wavelength. The release of the photons can be used to detect small amounts of substance (i.e. aromatic hydrocarbons) in/on a larger matrix. This method of detection has been used in laboratories for decades. Now, with the availability of lasers and optical fibers, this technology can be applied down hole in the field.

The UVOST system sends light through fiber optic cable strung within probe rods. The light exits through a sapphire window in the side of the probe rod. As the probe is advanced, the soil is exposed to the UV light. If fluorescent compounds exist (i.e. Contaminants) longer wavelength light is emitted. This "signal" light is transmitted through a fiber, back up hole to be analyzed. Responses are indicated in real-time on a graph of signal vs. depth. The graph can also display false color logs and waveforms to aid in identification of the contaminant present.

MATRIX ENVIRONMENTAL LLC

8631 Jefferson Highway
Osseo, Minnesota 55369
(763) 424-4803
fax (763) 424-9452

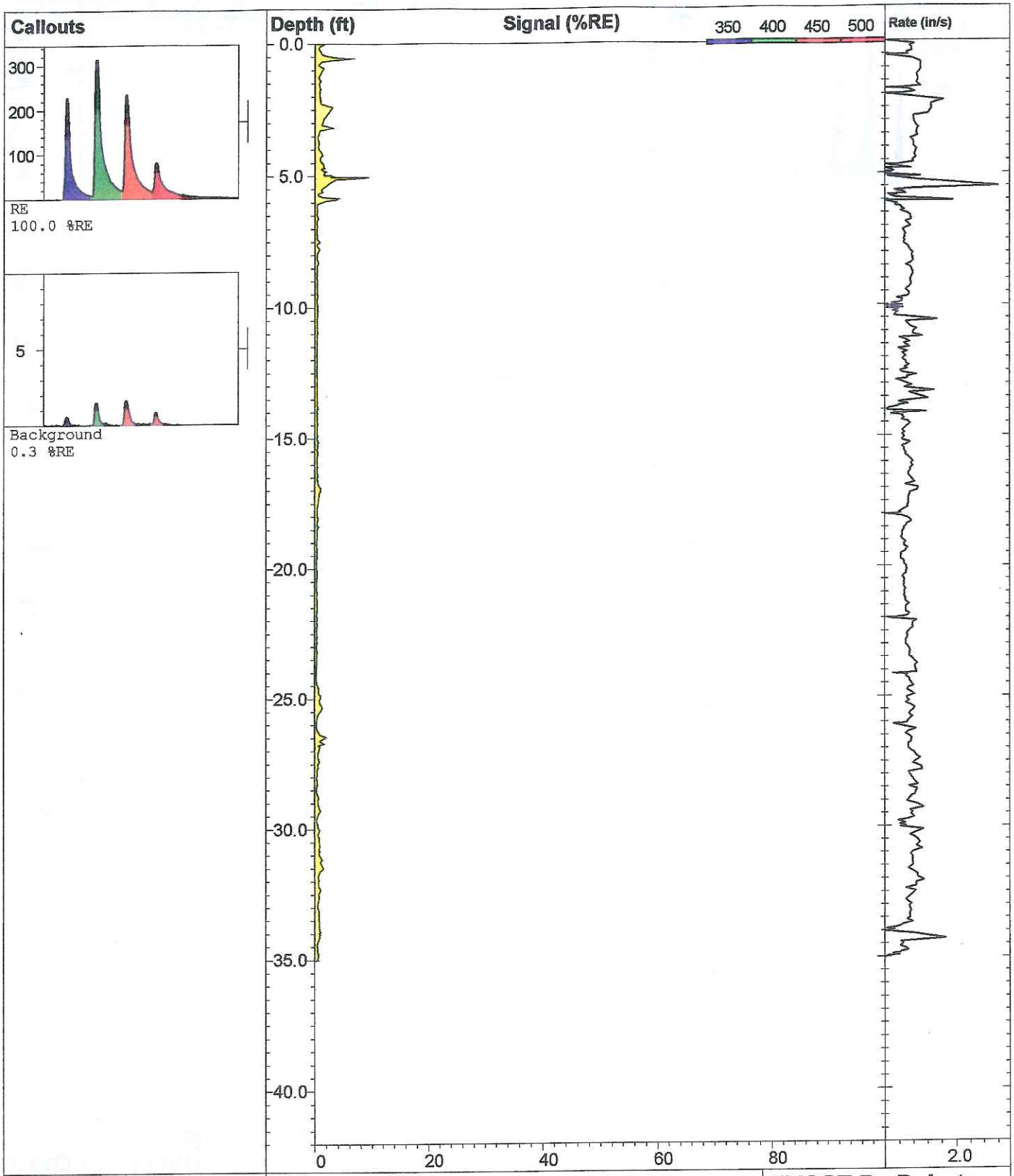
Client: CRA,Inc.
Contact: John Greetis
Services: UVOST Logging

Date: 2/25/08 - 2/29/08
Project: GM Plant
Project #: 009-MNDS-08UV
Address: Kansas City, KS

UVOST Log Summary

File	Date/Time	Latitude	Longitude	Final Depth (ft)	Max Signal (%RE)	Max. Signal Depth (ft)	Initial RE Area (pVs)	Background Area (pVs)	Fluorescence Top - Bottom (ft)
LIF-A4	2/28/2008 15:19	NA	NA	35.0	10	5.0	12051	36	NA
LIF-B2	2/28/2008 9:02	NA	NA	35.0	1	0.7	12684	102	NA
LIF-B3	2/28/2008 9:32	NA	NA	35.0	397	16.5	13167	42	13-28.5
LIF-B4	2/28/2008 10:08	NA	NA	38.0	348	13.3	13209	46	6-34 (see log)
LIF-B5	2/28/2008 10:39	NA	NA	38.0	189	13.9	12014	35	13-14.5, 28-32.5
LIF-C5	2/28/2008 11:09	NA	NA	38.0	370	20.8	11942	32	6-8.5, 11.5-33
LIF-C6	2/28/2008 11:41	NA	NA	35.0	6	4.5	12603	42	NA
LIF-D2	2/27/2008 9:19	NA	NA	35.0	7	4.9	12490	50	NA
LIF-D4	2/26/2008 14:37	NA	NA	38.0	371	8.8	12554	154	1-35
LIF-D6	2/27/2008 9:52	NA	NA	35.0	2	0.7	12991	80	NA
LIF-E2	2/27/2008 10:56	NA	NA	38.0	114	30.8	11177	67	29.5-32
LIF-E4	2/26/2008 11:50	NA	NA	38.0	318	22.6	10856	91	1-34 (see log)
LIF-E6	2/27/2008 10:23	NA	NA	35.0	1	0.7	11524	85	NA
LIF-F2	2/27/2008 11:30	NA	NA	38.0	173	26.6	12445	37	25.5-29.5
LIF-F3	2/27/2008 14:09	NA	NA	38.0	358	24.0	12569	42	19.5-33.5
LIF-F4	2/26/2008 15:24	NA	NA	38.1	329	22.2	12415	124	16-34
LIF-F5	2/27/2008 14:44	NA	NA	42.0	387	23.9	11838	30	21.5-32
LIF-F6	2/28/2008 13:38	NA	NA	35.0	2	30.9	12363	41	NA
LIF-G2	2/27/2008 16:01	NA	NA	35.1	157	27.5	11125	26	25-30.5
LIF-G4	2/26/2008 16:08	NA	NA	38.0	263	25.0	12120	102	22.5-32.5
LIF-G5	2/27/2008 15:24	NA	NA	35.0	221	27.4	11409	28	24.5-28
LIF-H2	2/27/2008 16:41	NA	NA	35.0	2	31.3	11839	58	NA
LIF-H3	2/28/2008 14:40	NA	NA	38.0	260	25.2	11740	38	24.5-30.5
LIF-H4	2/28/2008 14:08	NA	NA	35.0	131	29.0	11765	32	28.5-31

UVOST LOGS
at 100% RE



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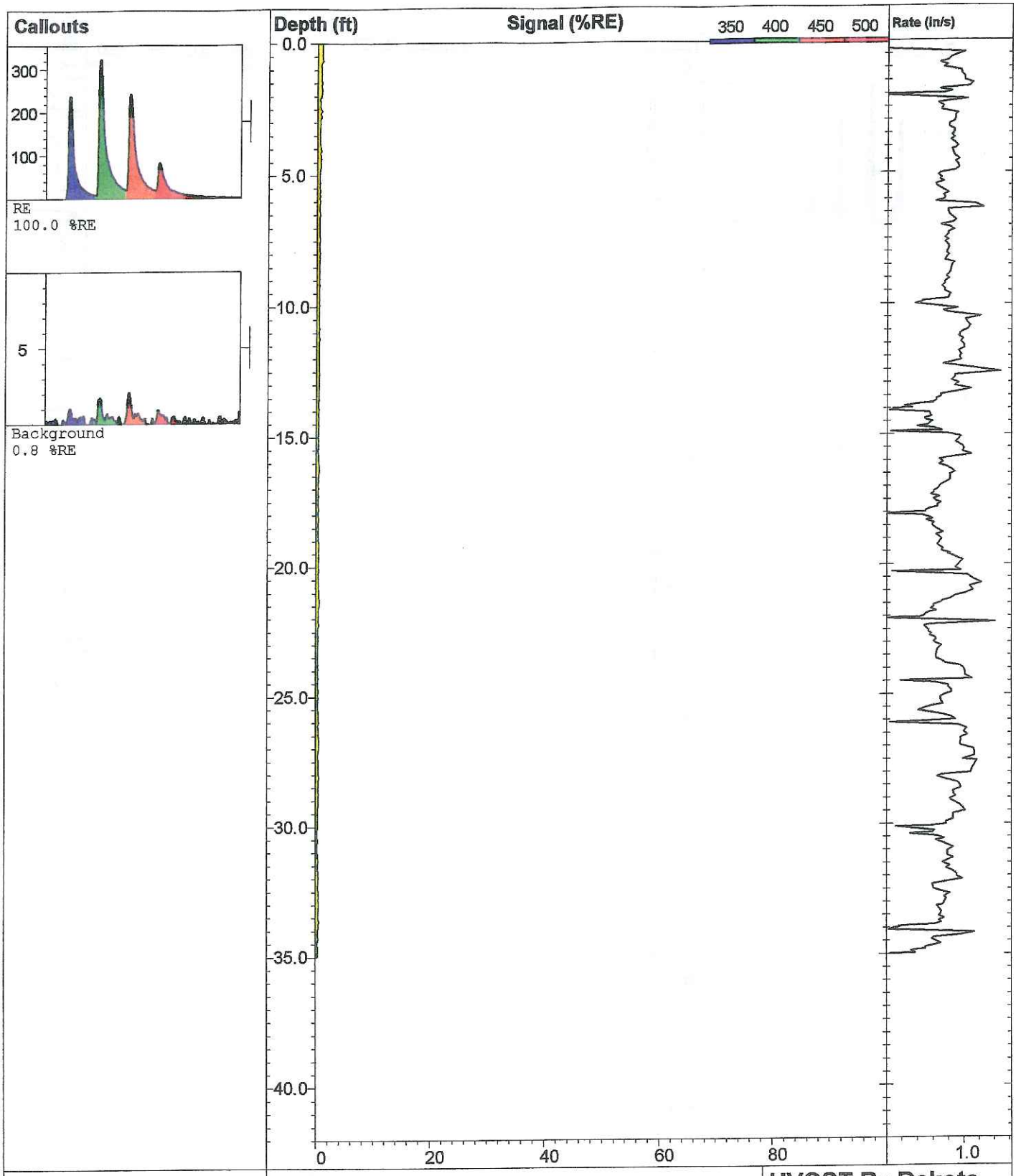
8631 Jefferson Highway
Osseo, MN 55369
(763) 424-4803
www.matrixenv.com

LIF-A4

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.02 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **9.7 % @ 5.05 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 15:19 CST**



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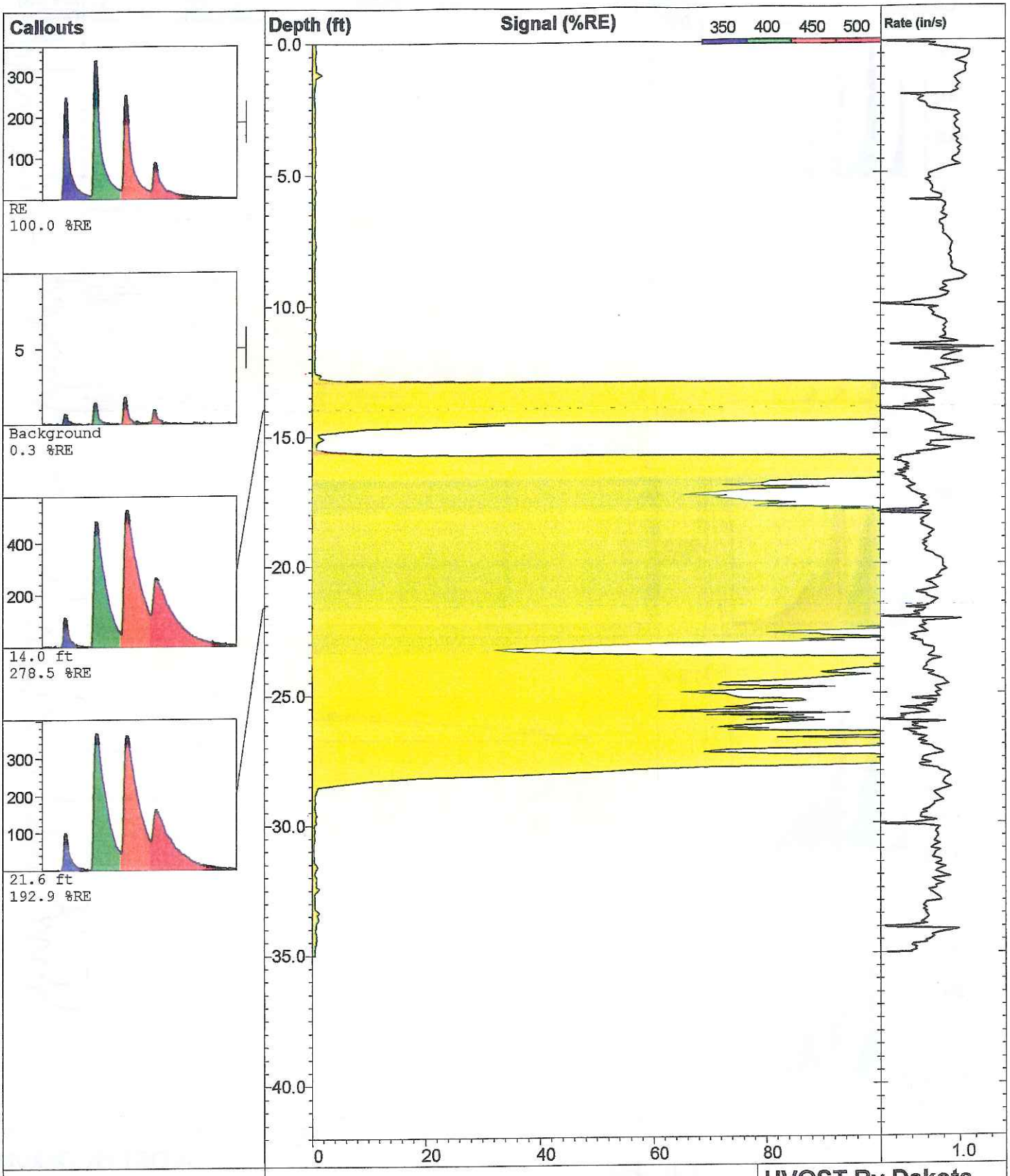
LIF-B2

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **1.0 % @ 0.65 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 09:02 CST**



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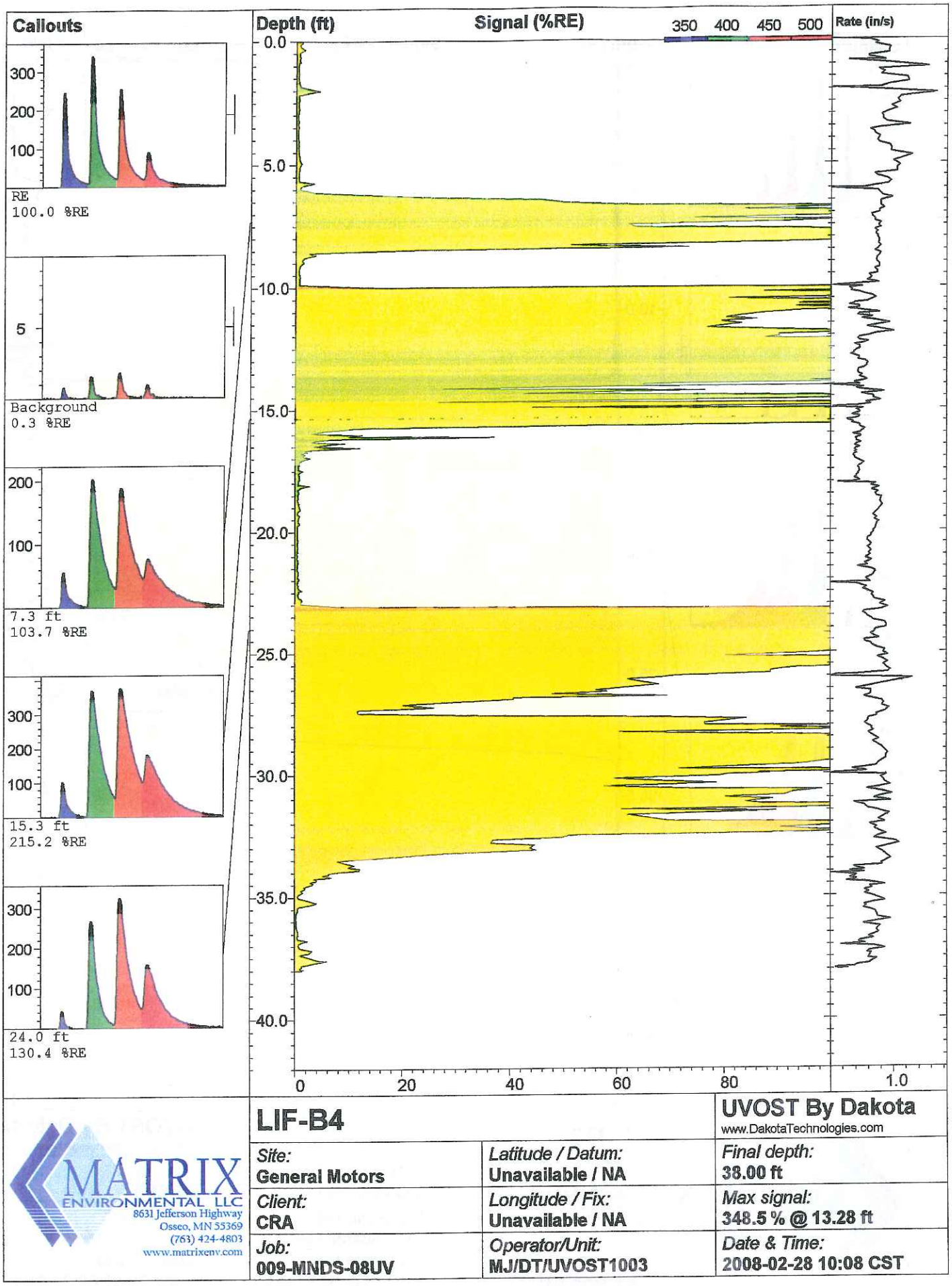
LIF-B3

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.01 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **397.4 % @ 16.46 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 09:32 CST**



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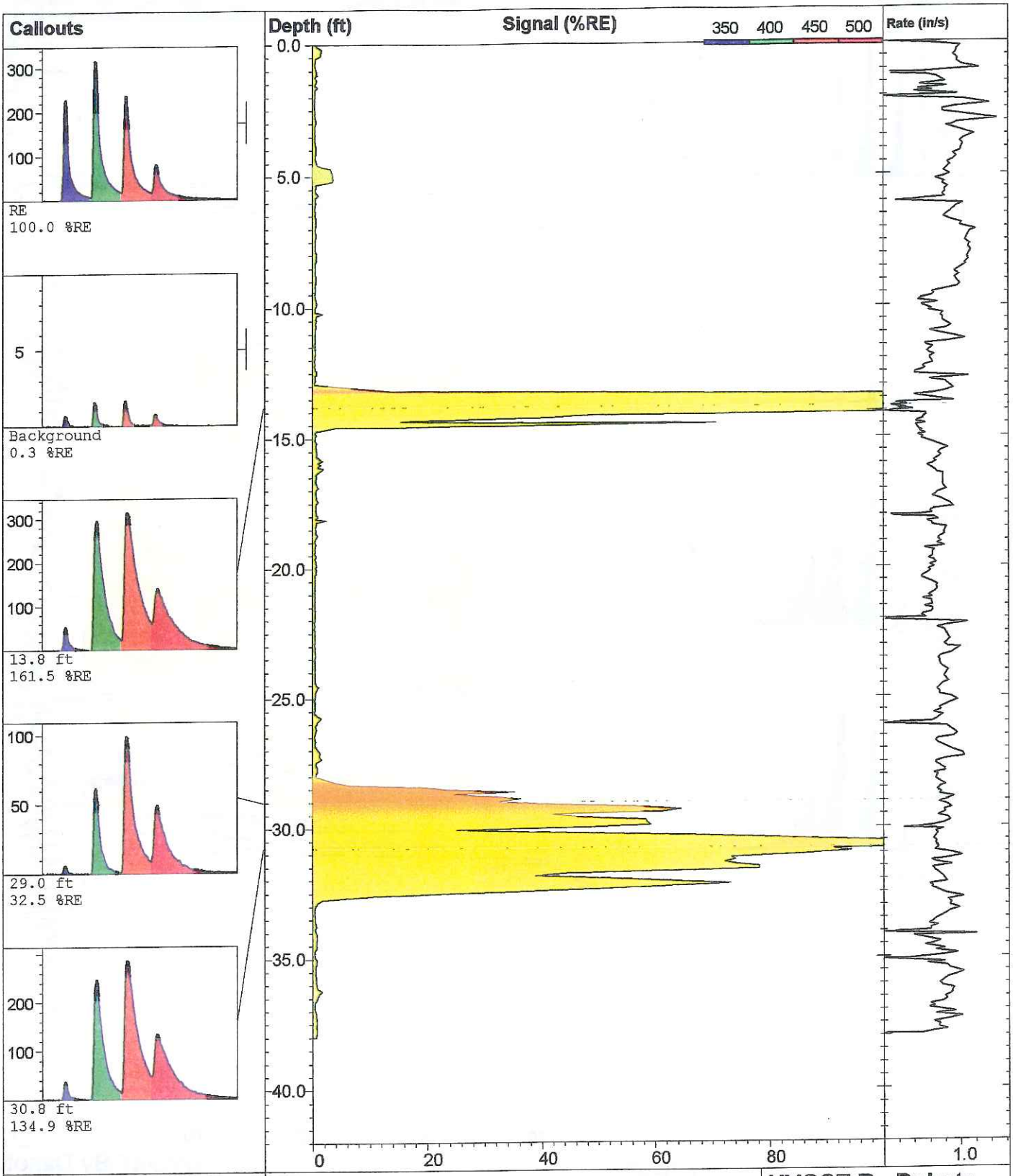
LIF-B4

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **348.5 % @ 13.28 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 10:08 CST**



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LIF-B5

UVOST By Dakota
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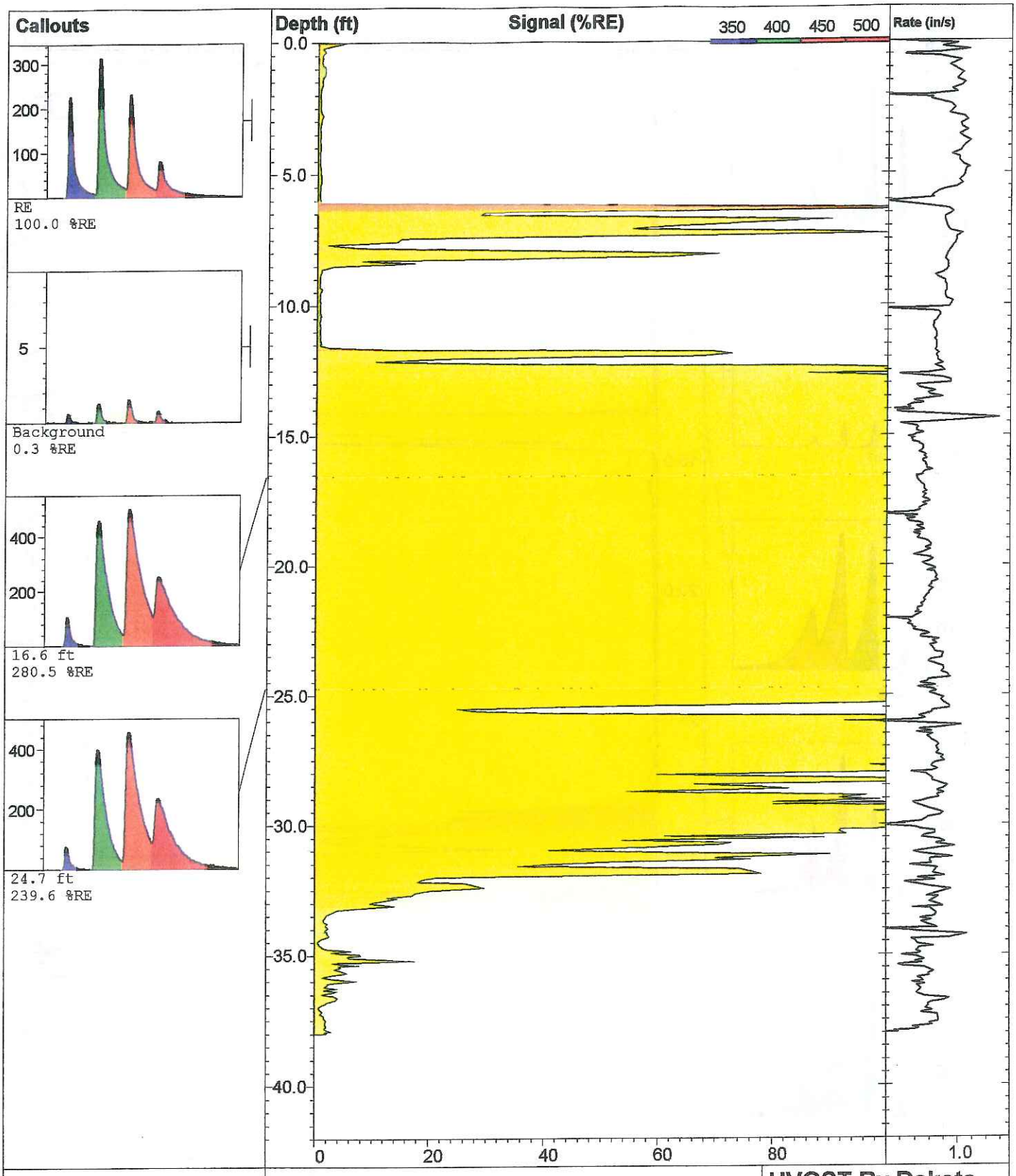
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **189.2 % @ 13.94 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 10:39 CST**



LIF-C5

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **370.4 % @ 20.78 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 11:09 CST**

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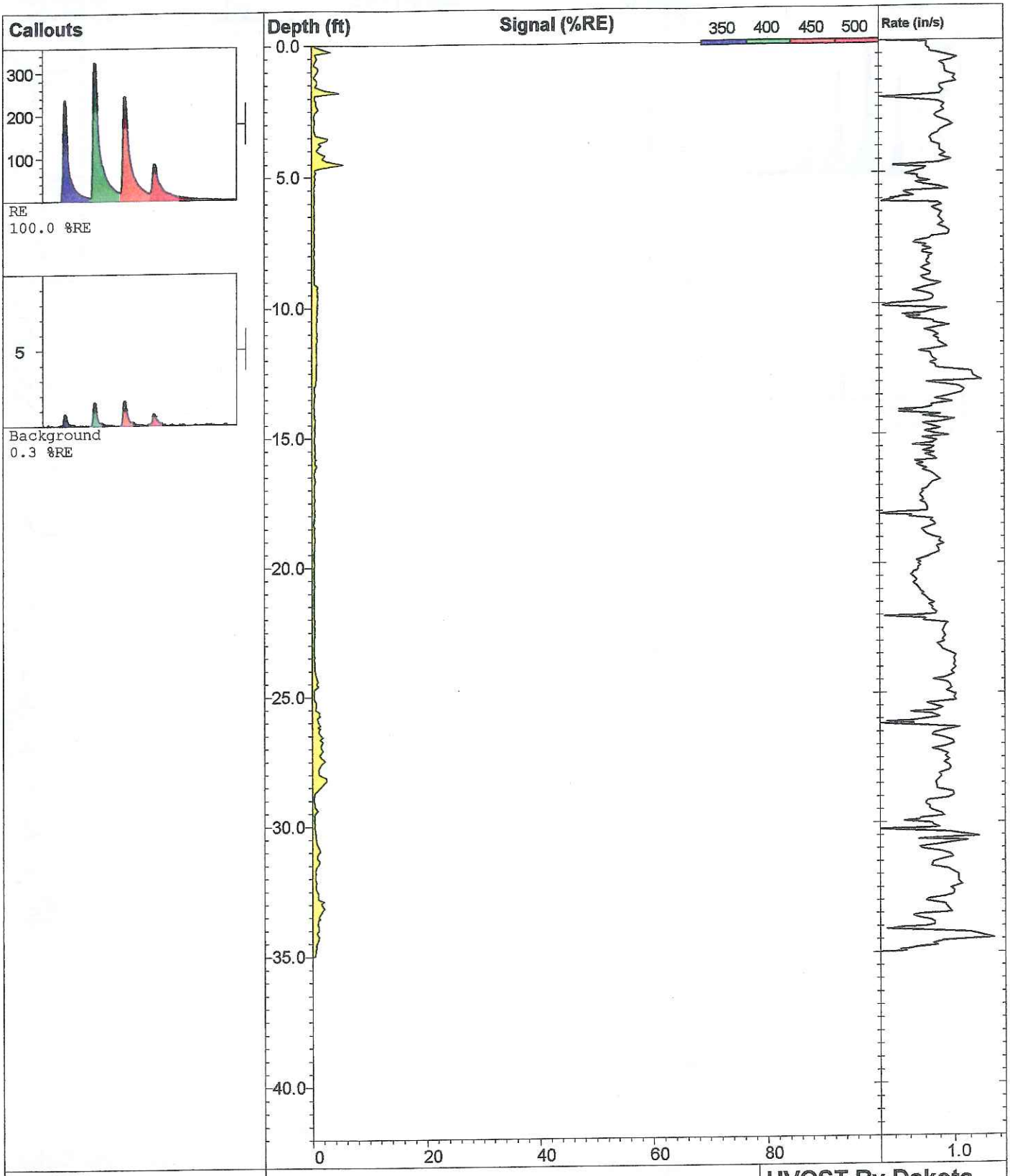

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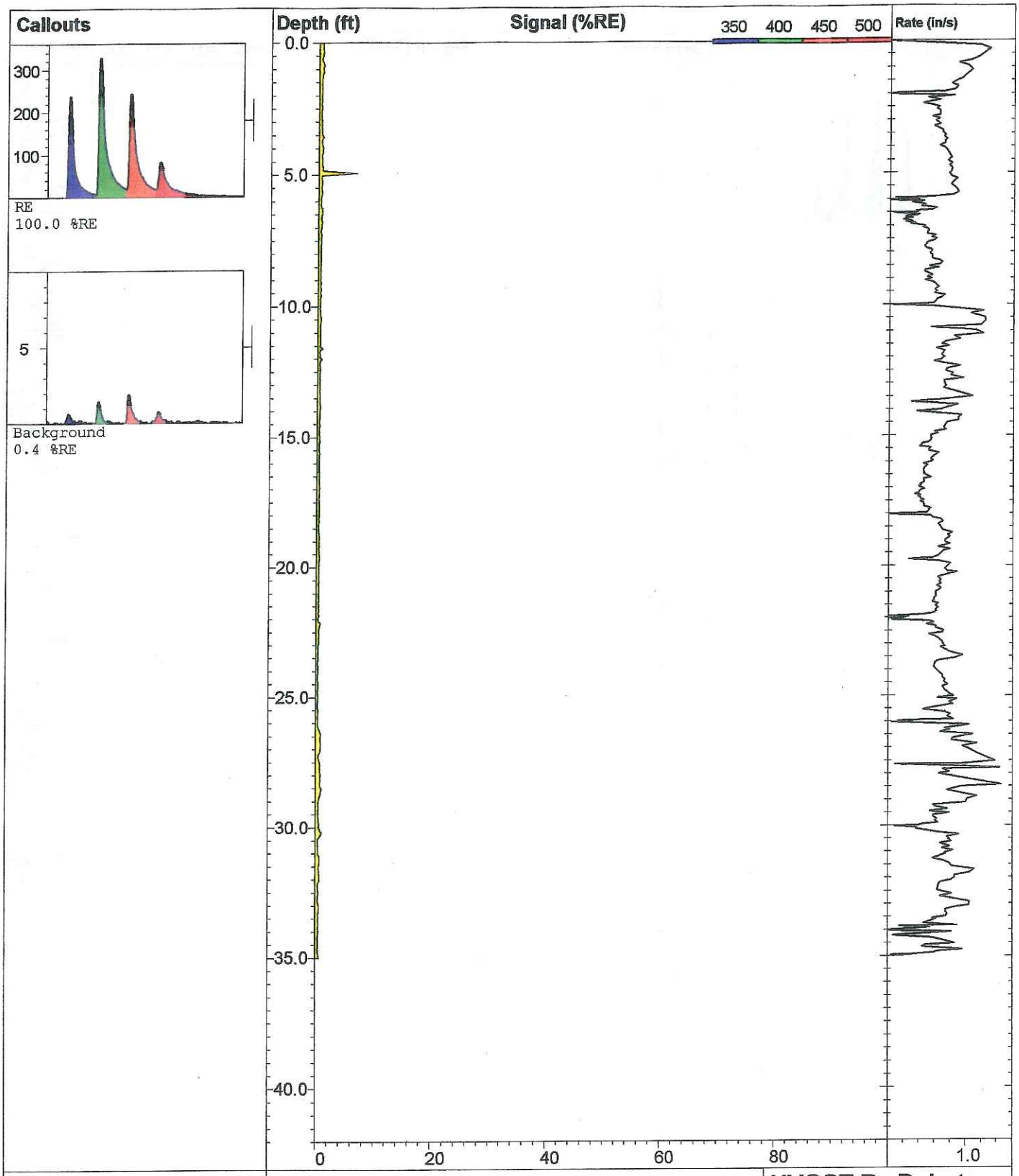
LIF-C6

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **5.6 % @ 4.53 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 11:41 CST**



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LIF-D2

UVOST By Dakota
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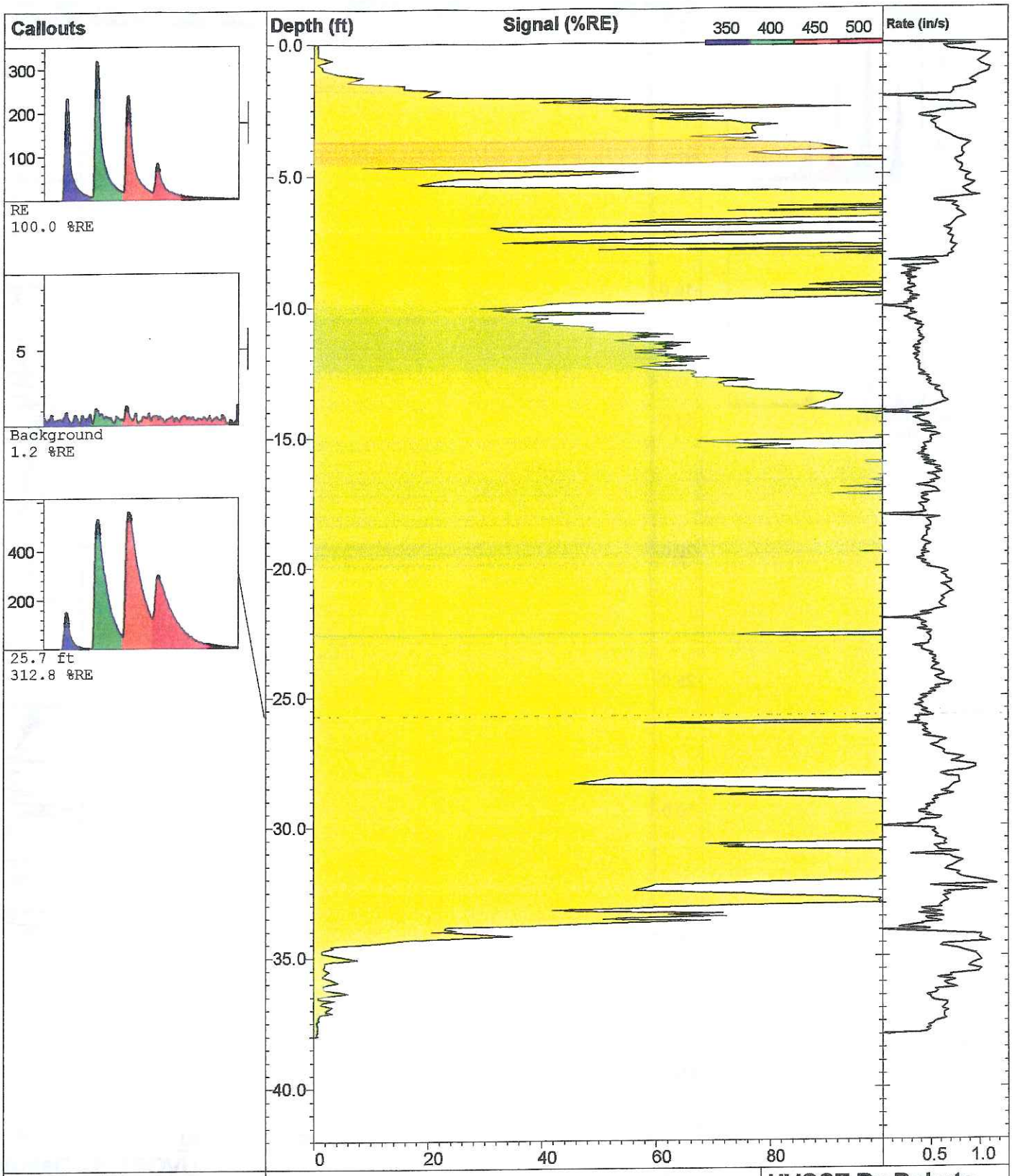
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **6.7 % @ 4.94 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 09:19 CST**



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LIF-D4

UVOST By Dakota
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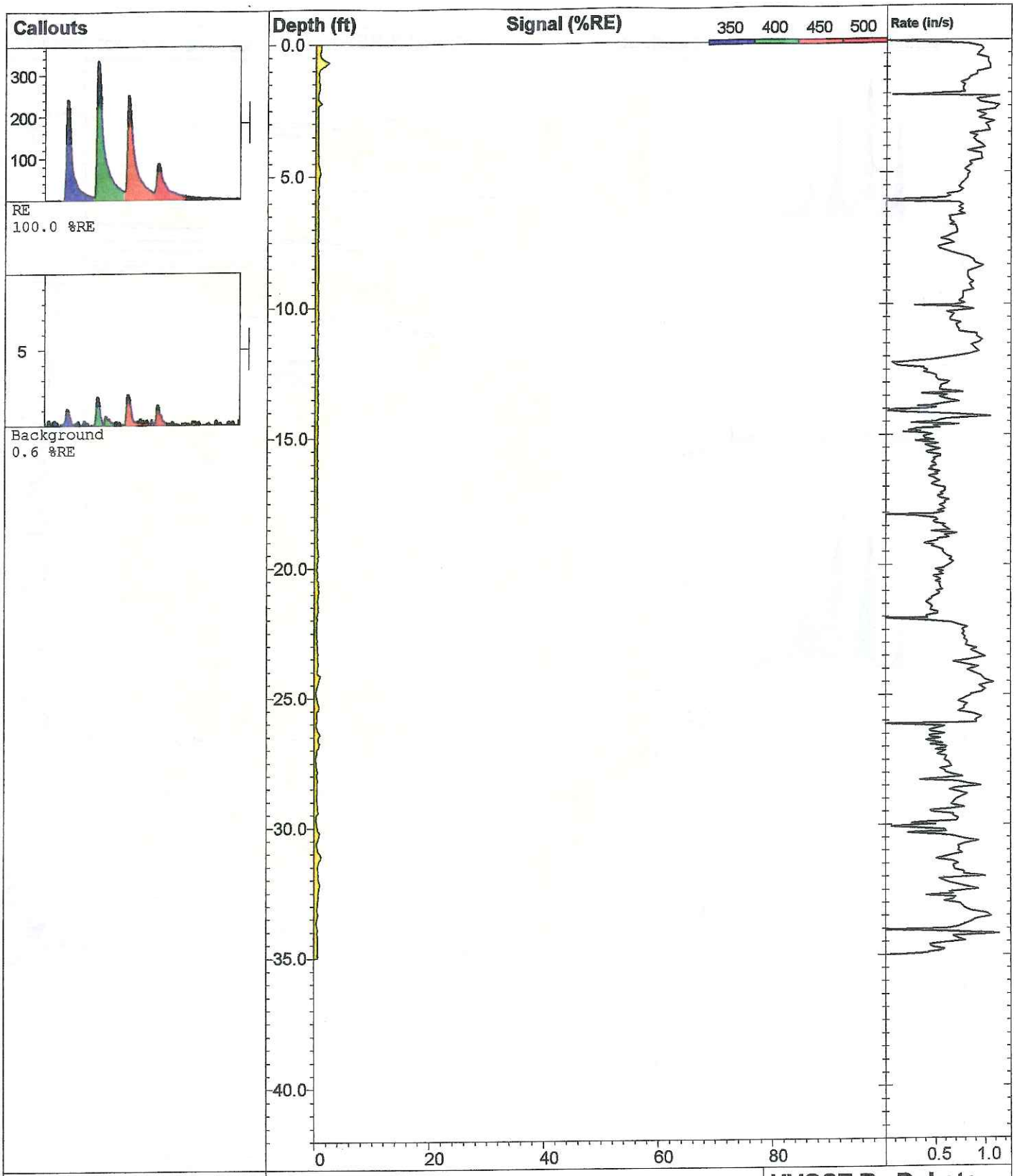
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **371.5 % @ 8.85 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 14:37 CST**



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LIF-D6

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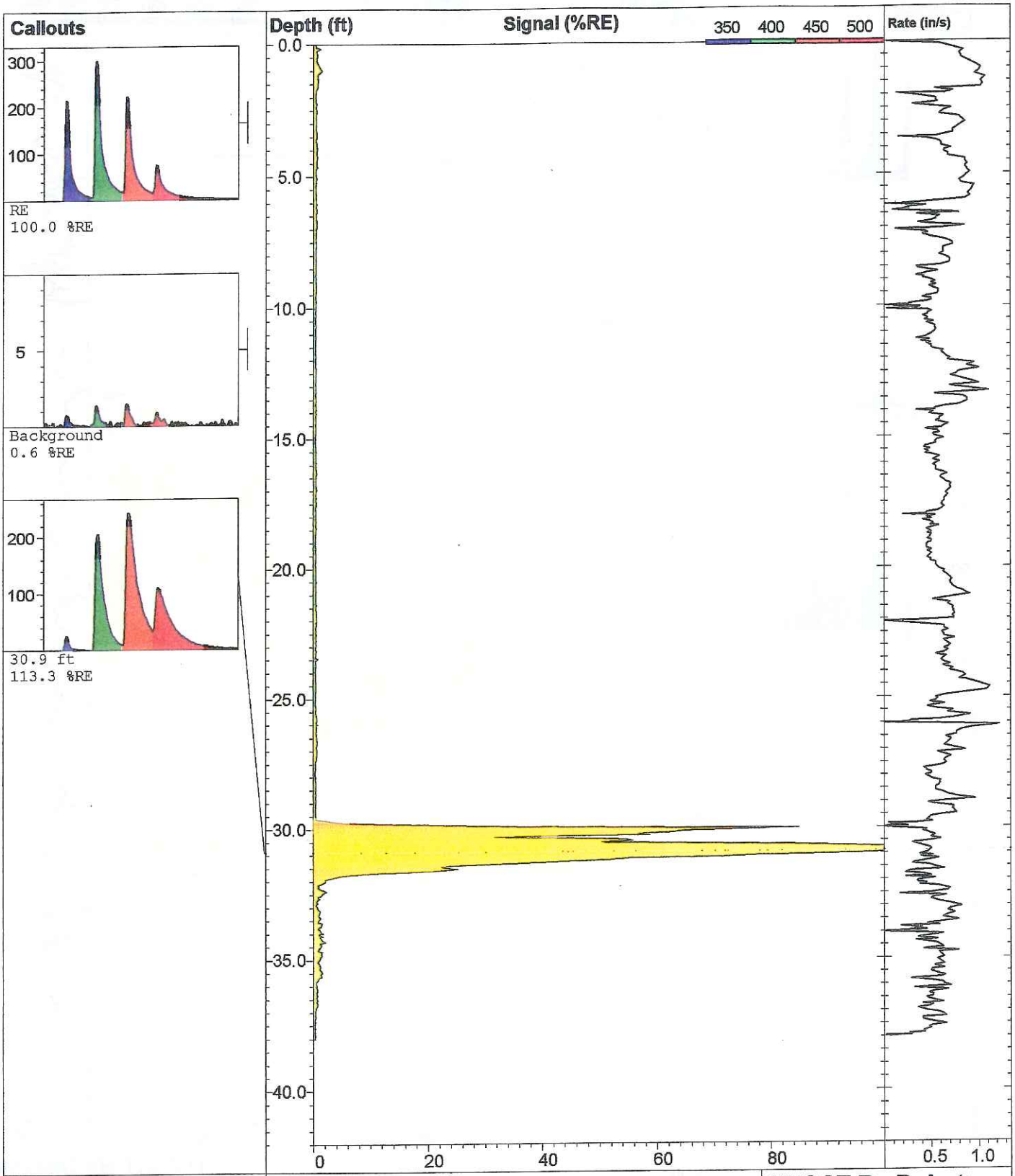
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **2.3 % @ 0.69 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 09:52 CST**



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LIF-E2

UVOST By Dakota
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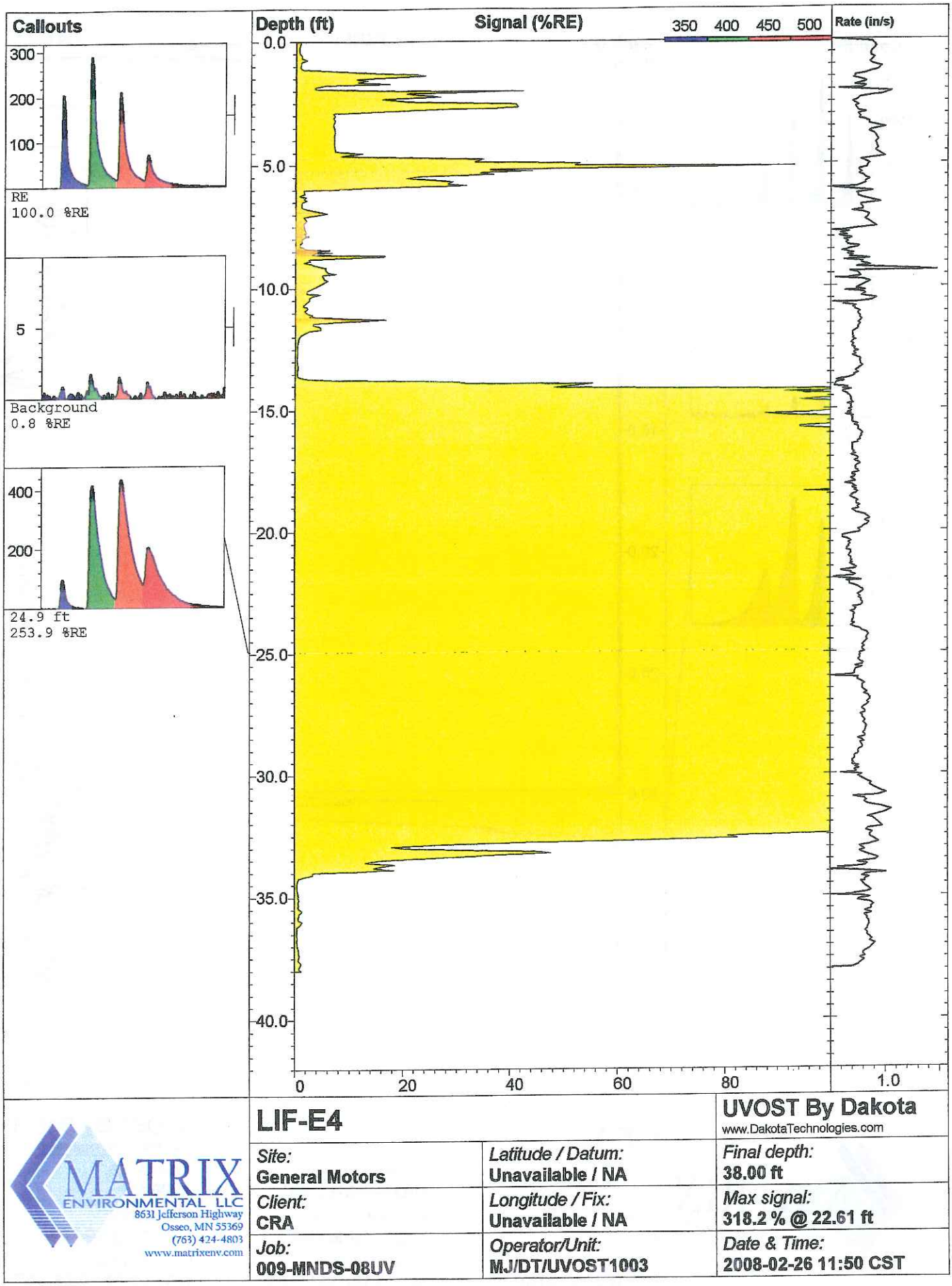
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **113.7 % @ 30.82 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 10:56 CST**



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LIF-E4

UVOST By Dakota
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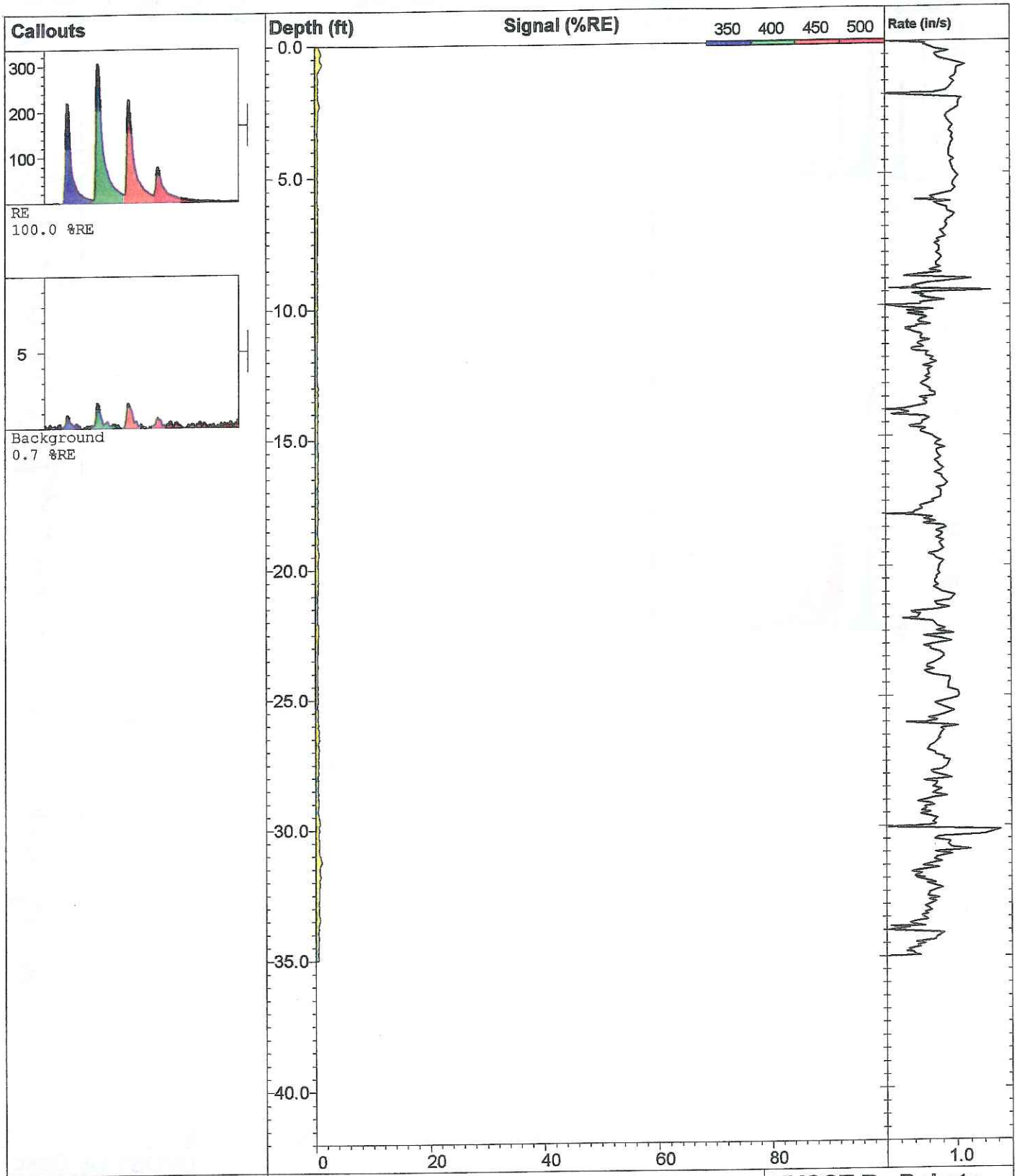
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **318.2 % @ 22.61 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 11:50 CST**



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LIF-E6

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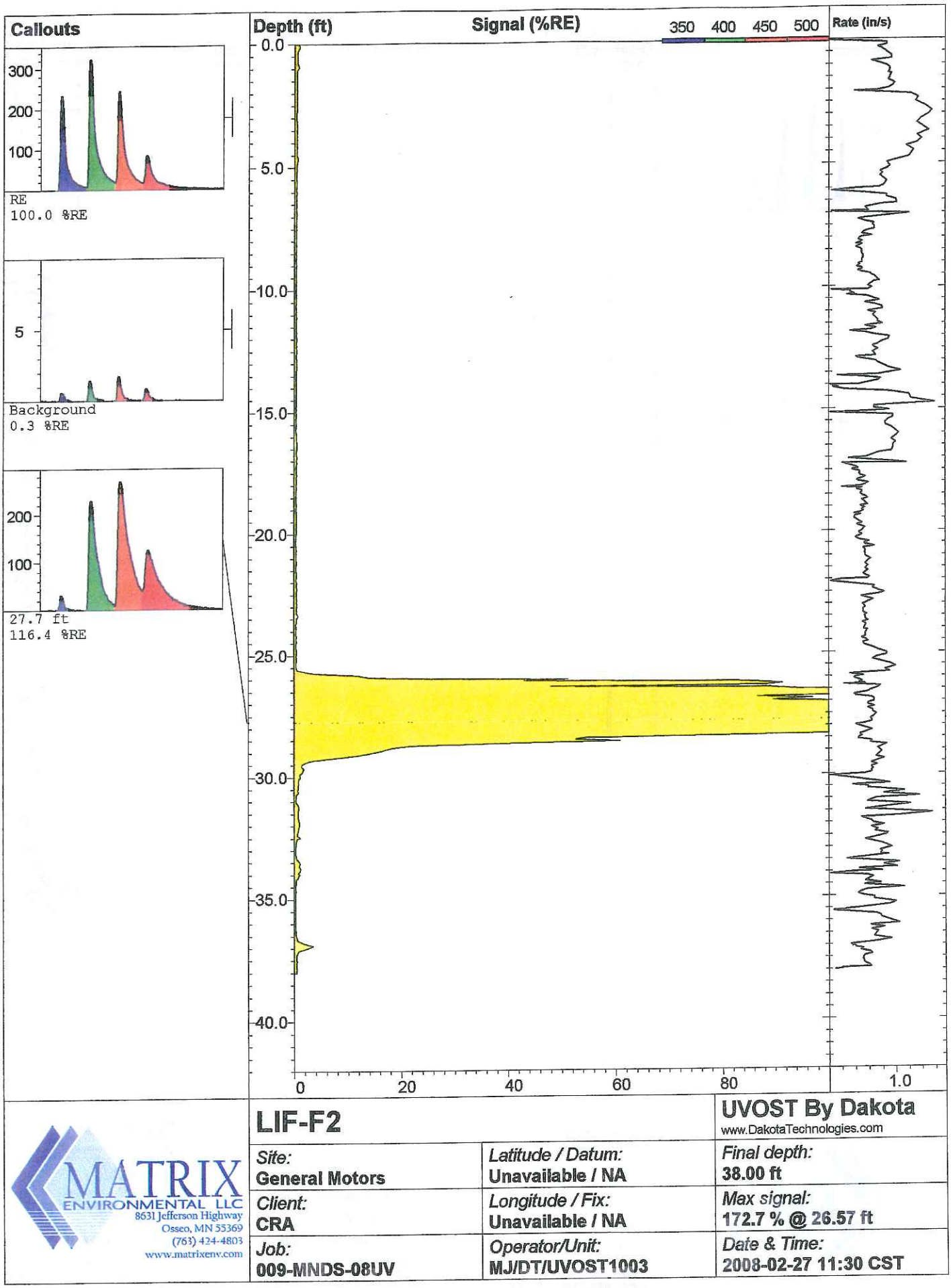
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **1.3 % @ 0.67 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 10:23 CST**



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LIF-F2

UVOST By Dakota
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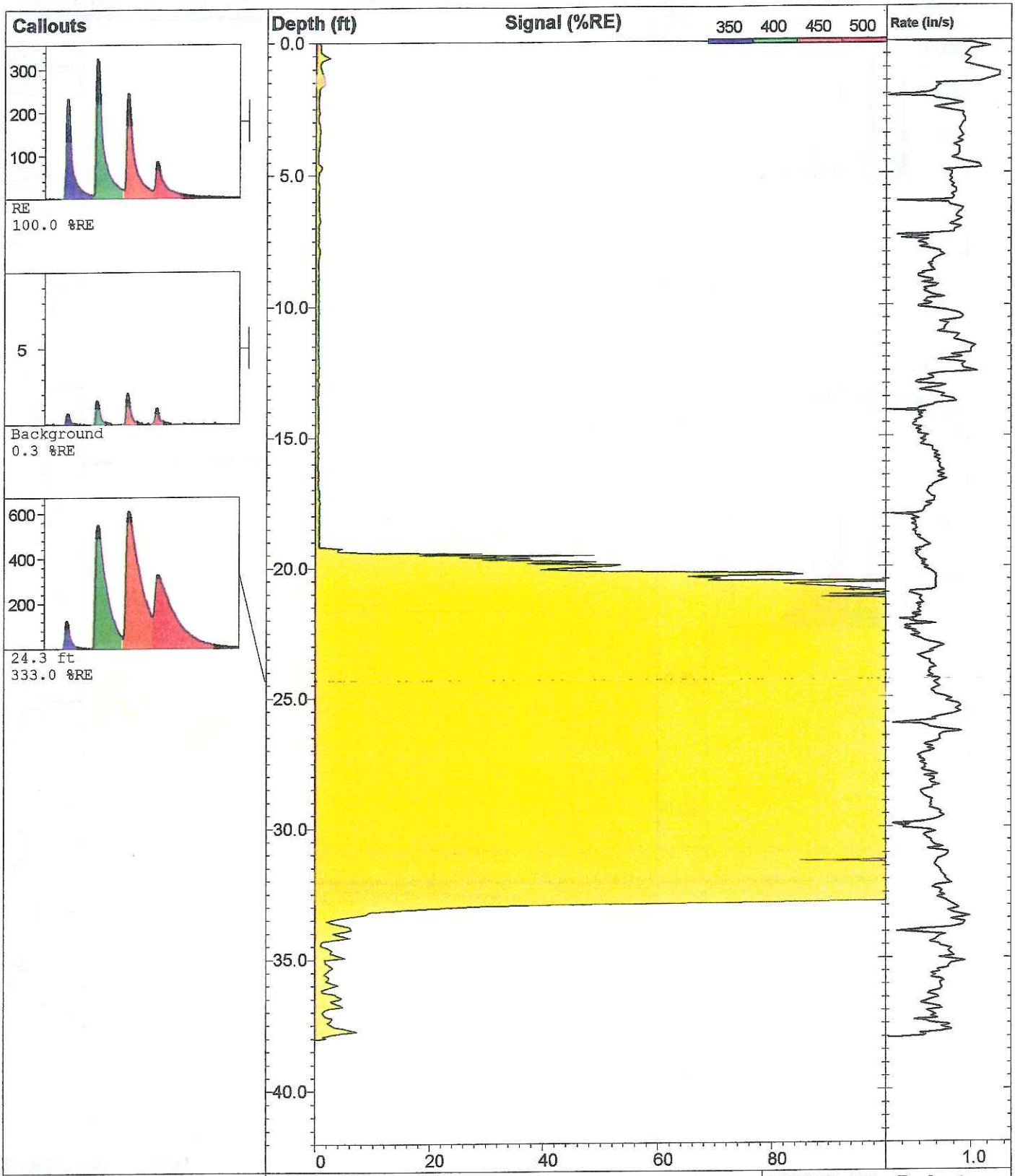
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **172.7 % @ 26.57 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 11:30 CST**



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Osseo, MN 55369
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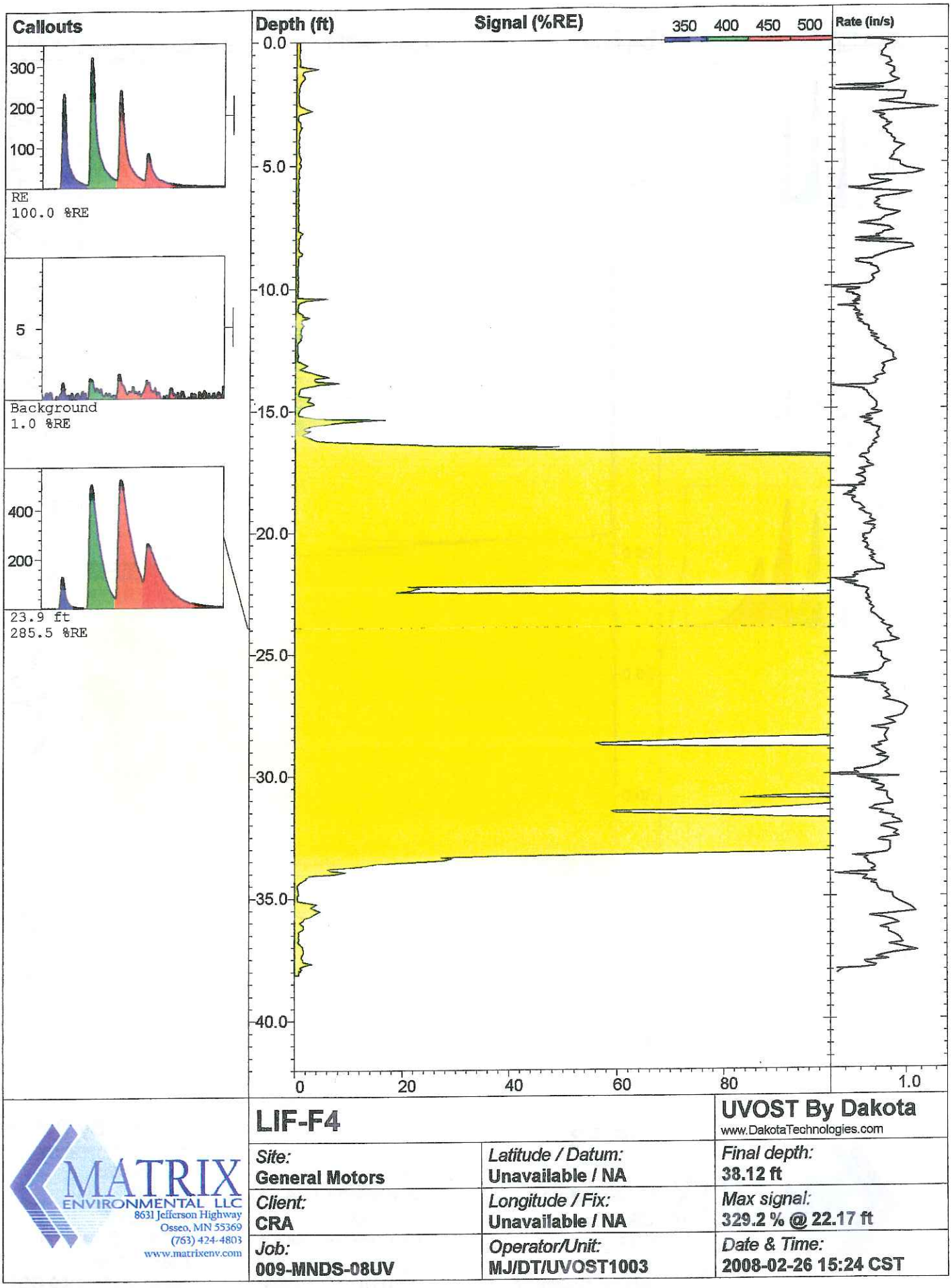
LIF-F3

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.03 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **357.7 % @ 24.01 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 14:09 CST**



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8631 Jefferson Highway
Osseo, MN 55369
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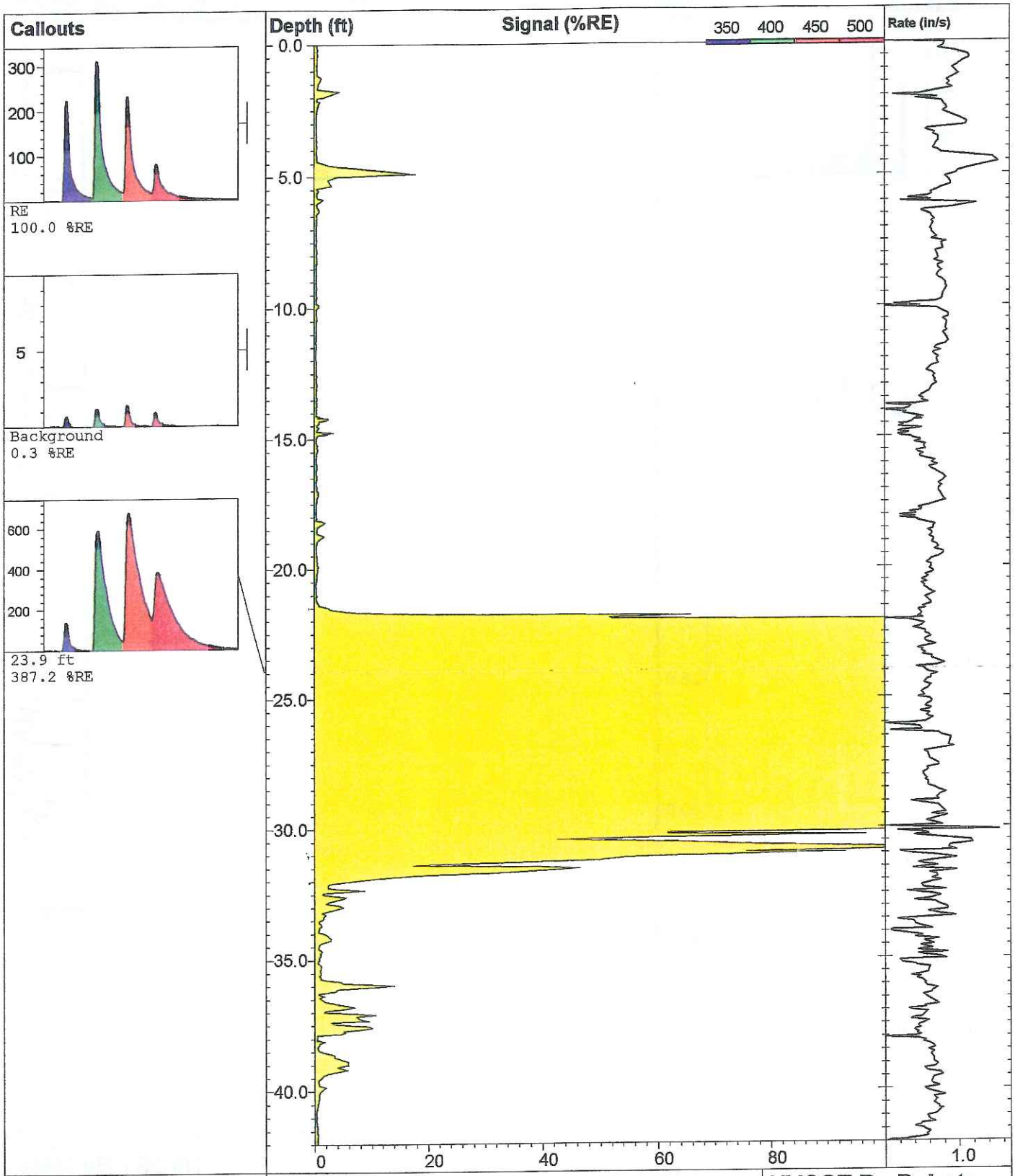
www.matrixenv.com

LIF-F4

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.12 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **329.2 % @ 22.17 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 15:24 CST**



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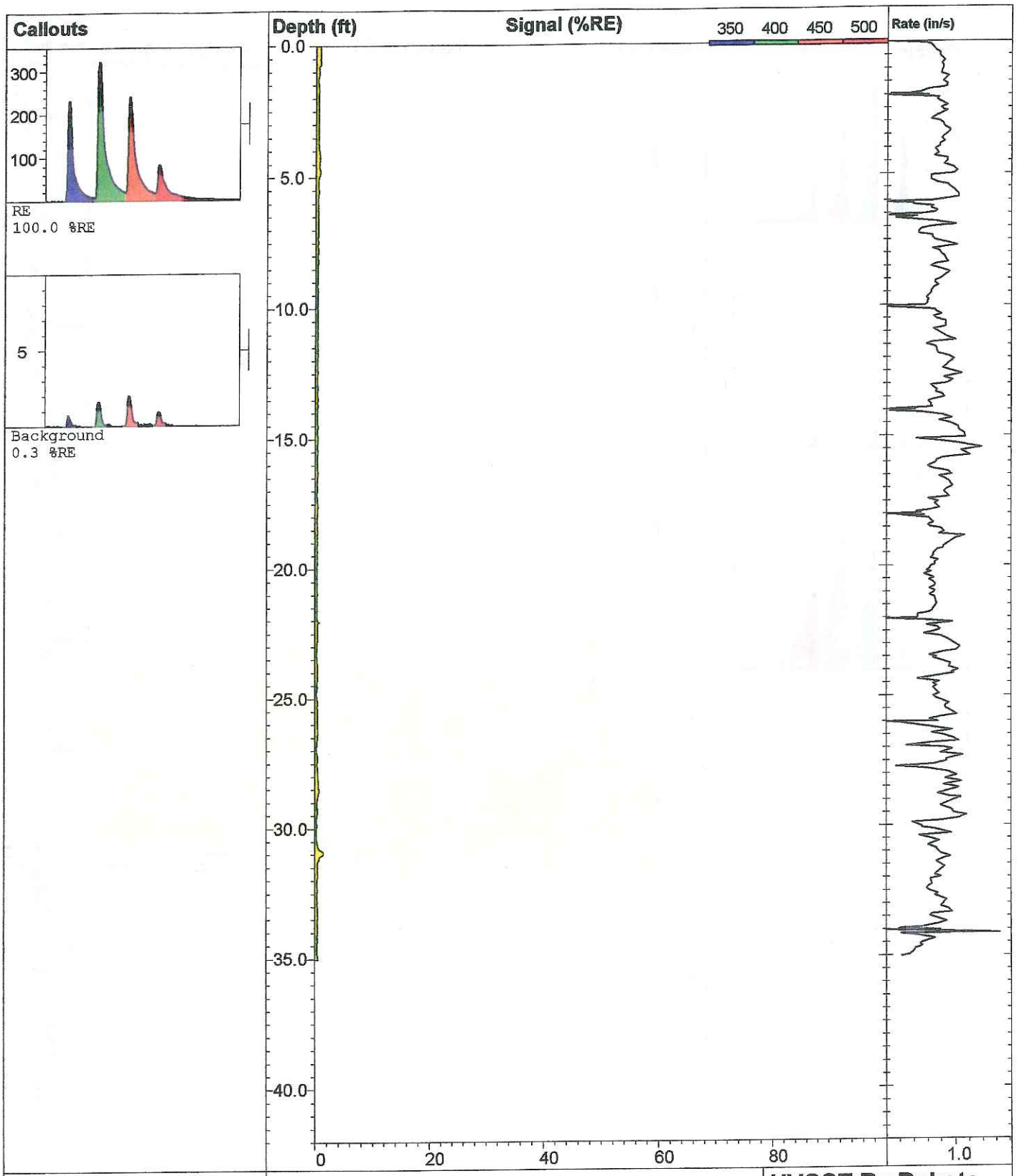
LIF-F5

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **42.01 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **387.2 % @ 23.94 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 14:44 CST**



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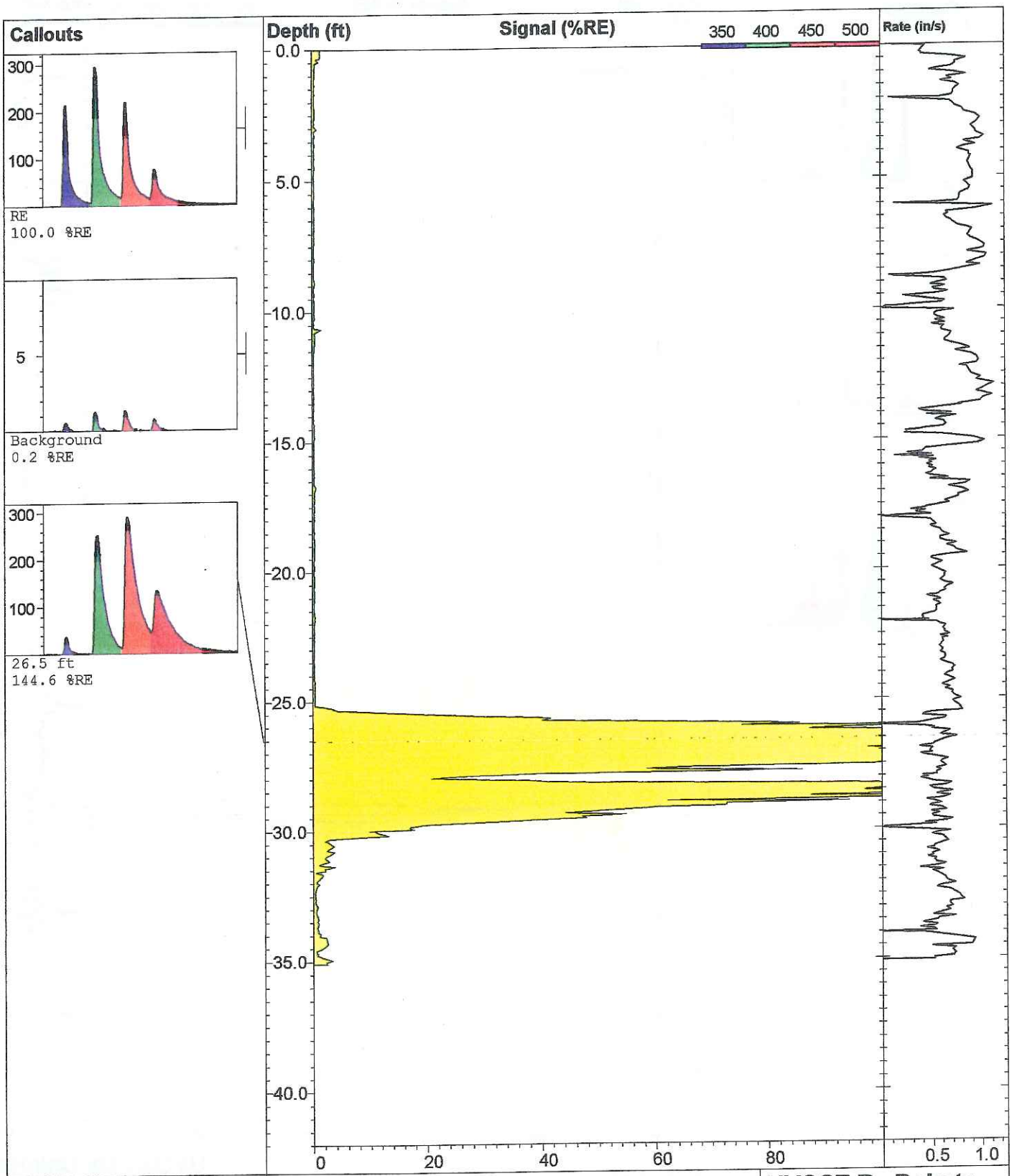
LIF-F6

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.03 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **1.6 % @ 30.90 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 13:38 CST**



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LIF-G2

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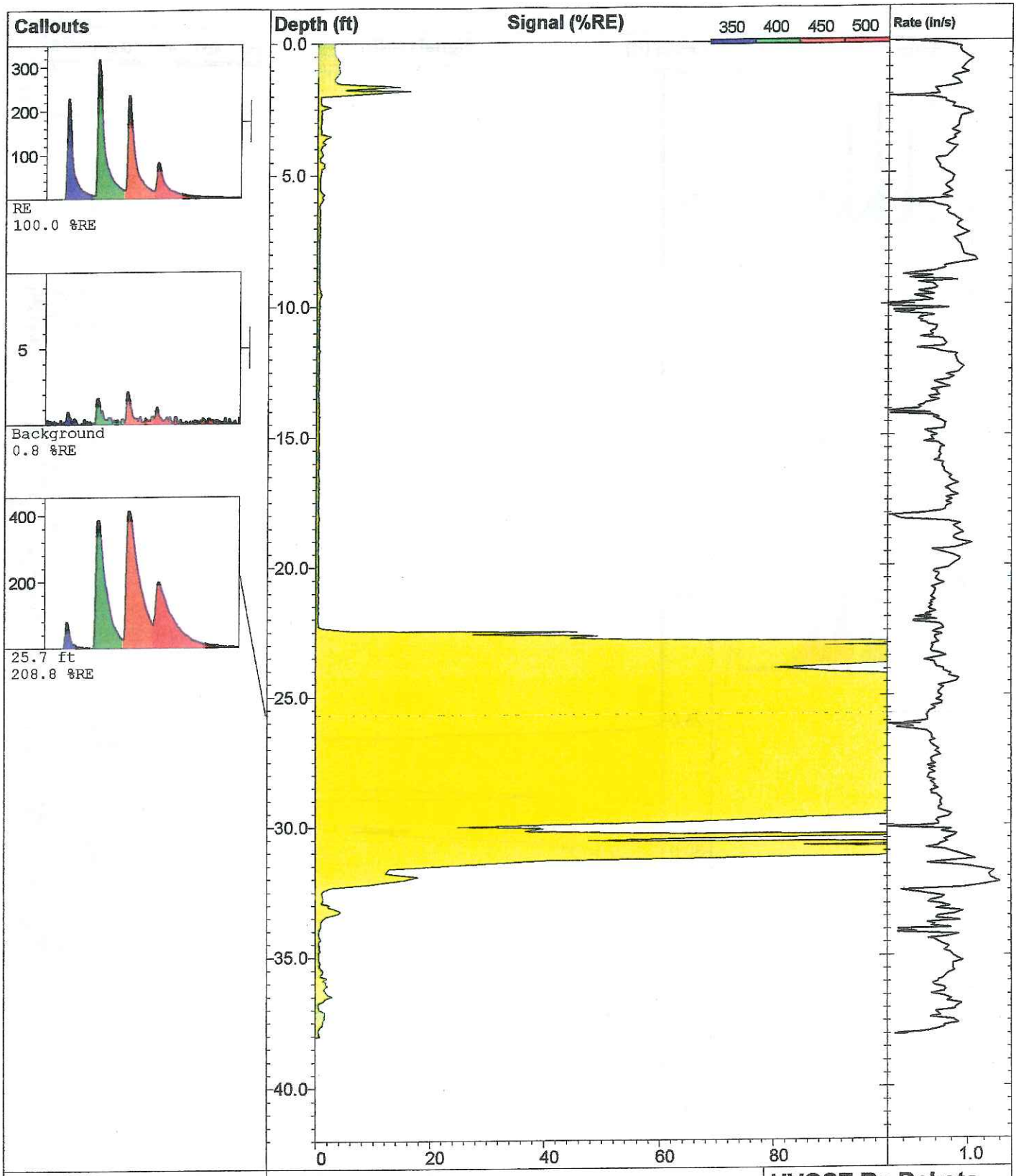
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.10 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **156.6 % @ 27.46 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 16:01 CST**



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LIF-G4

UVOST By Dakota
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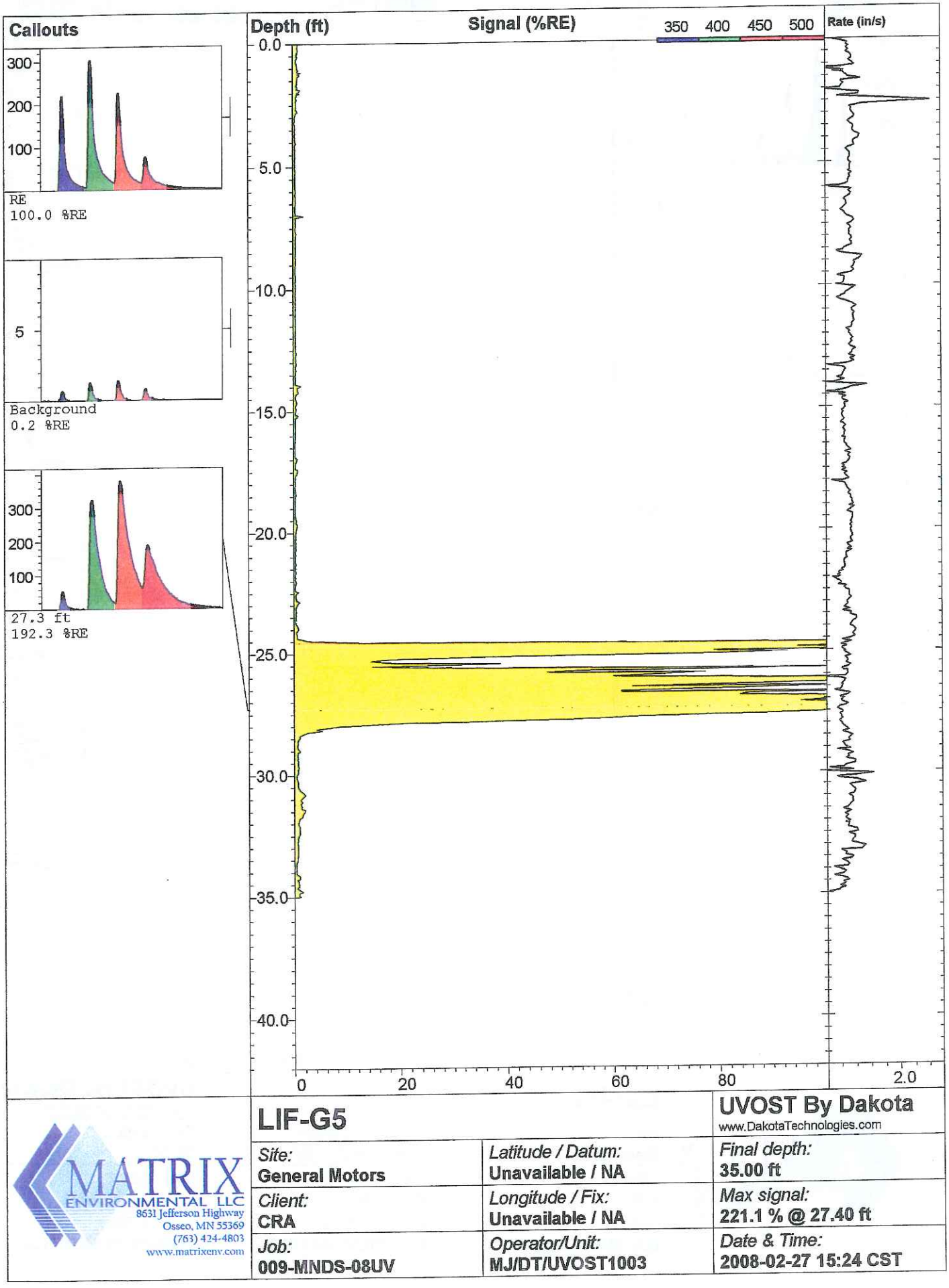
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.03 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **263.5 % @ 25.05 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 16:08 CST**



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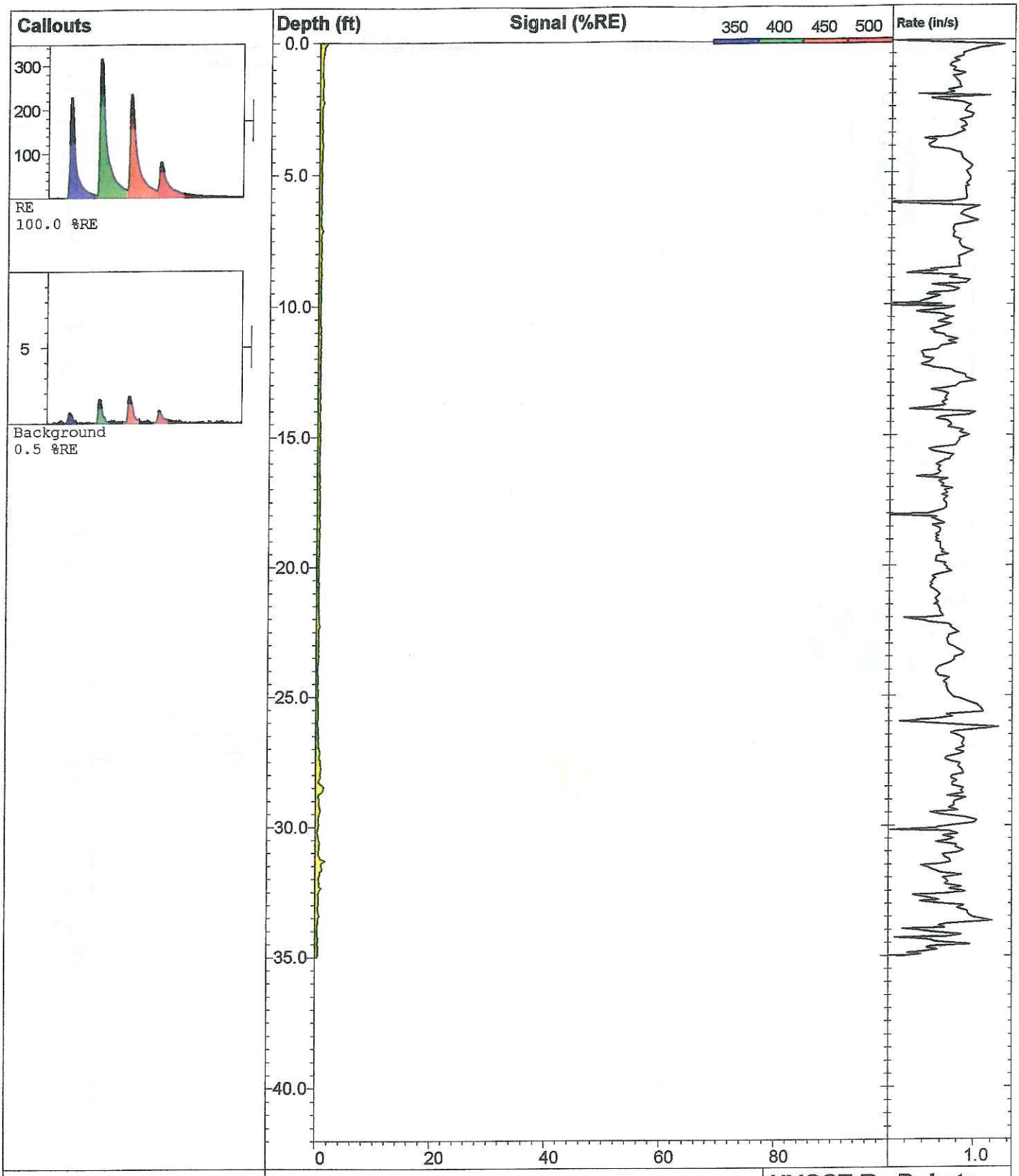
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **221.1 % @ 27.40 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 15:24 CST**



LIF-H2

UVOST By Dakota
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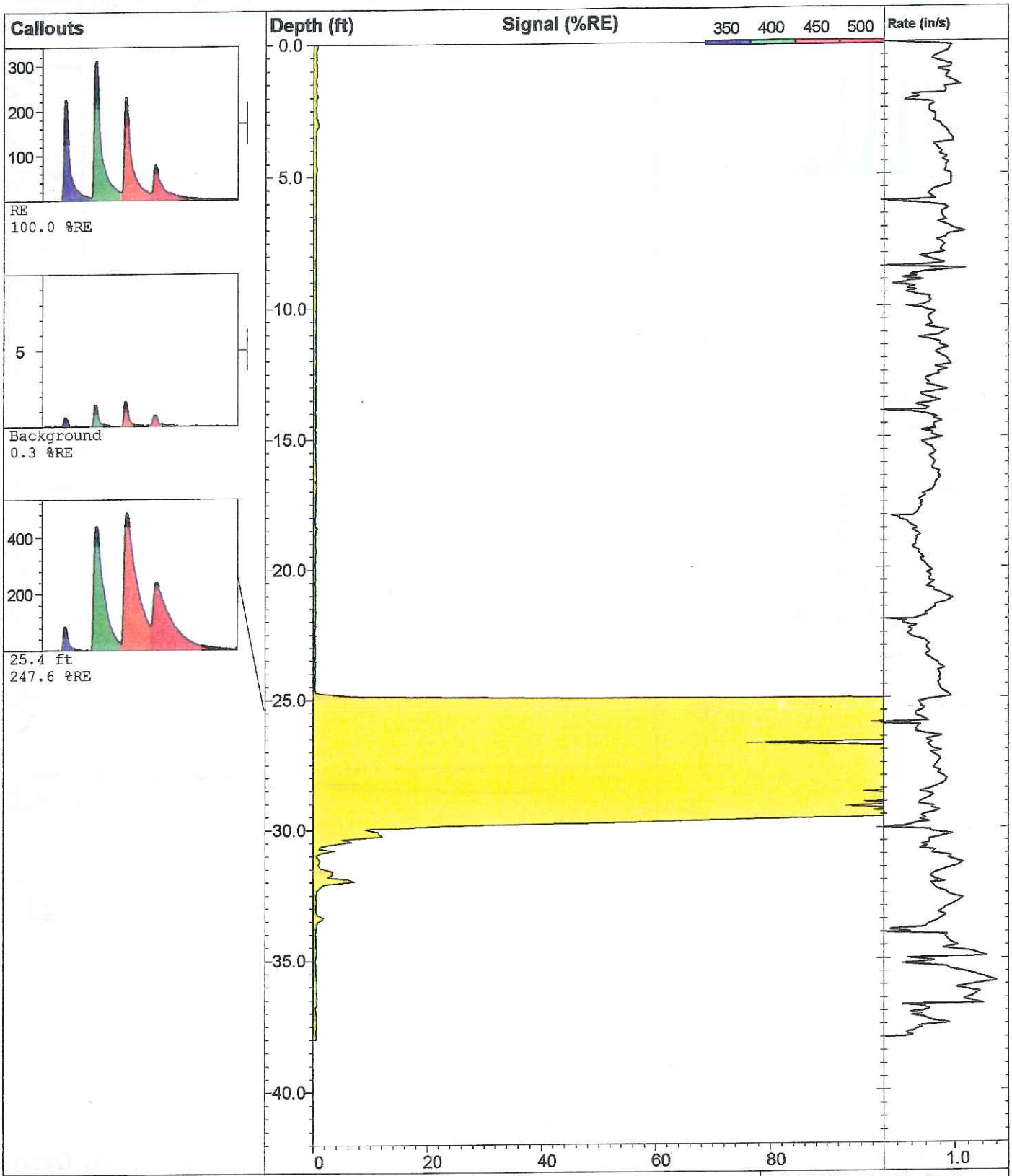
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **1.7 % @ 31.30 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 16:41 CST**



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LIF-H3

UVOST By Dakota
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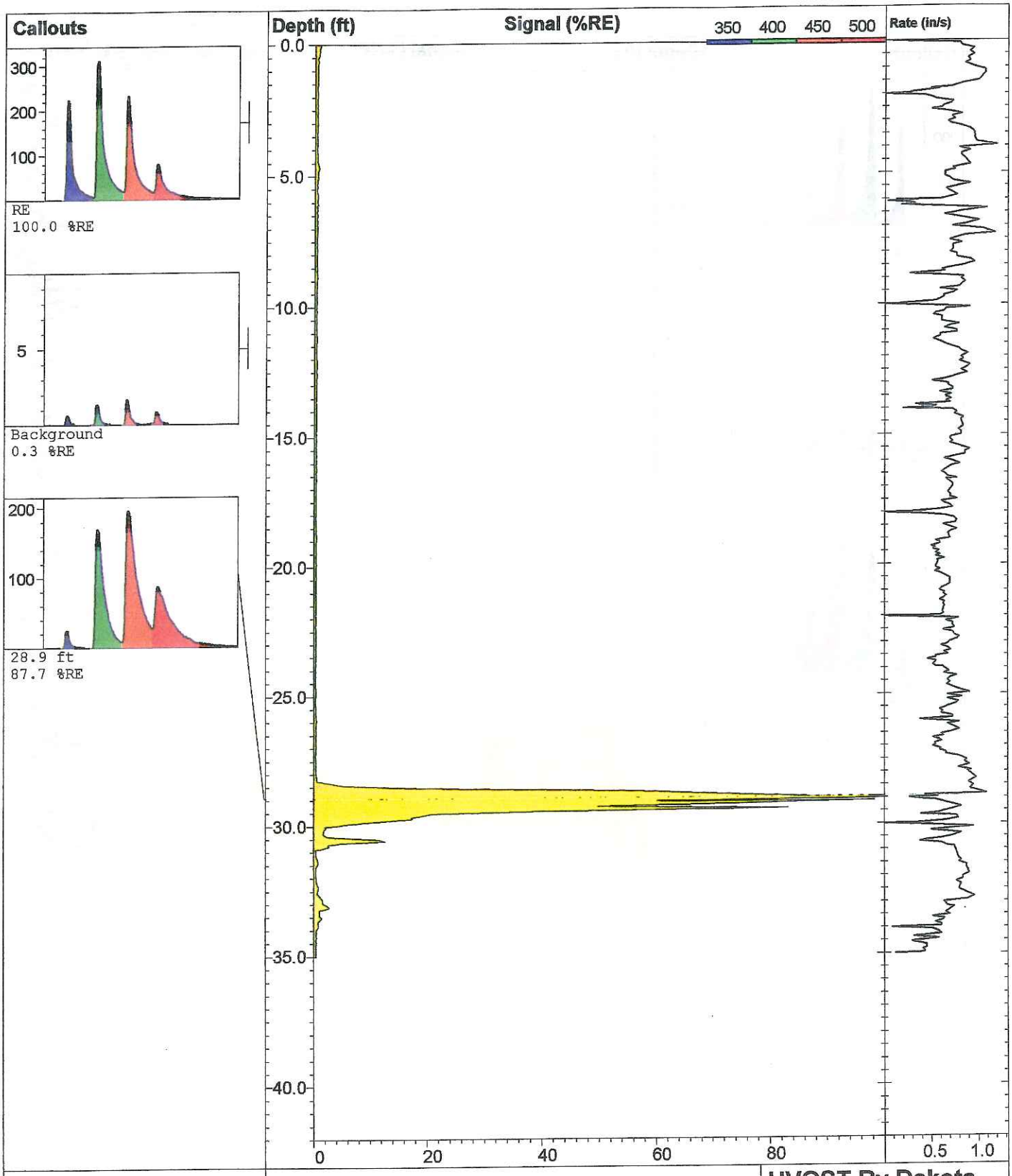
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **260.0 % @ 25.23 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 14:40 CST**



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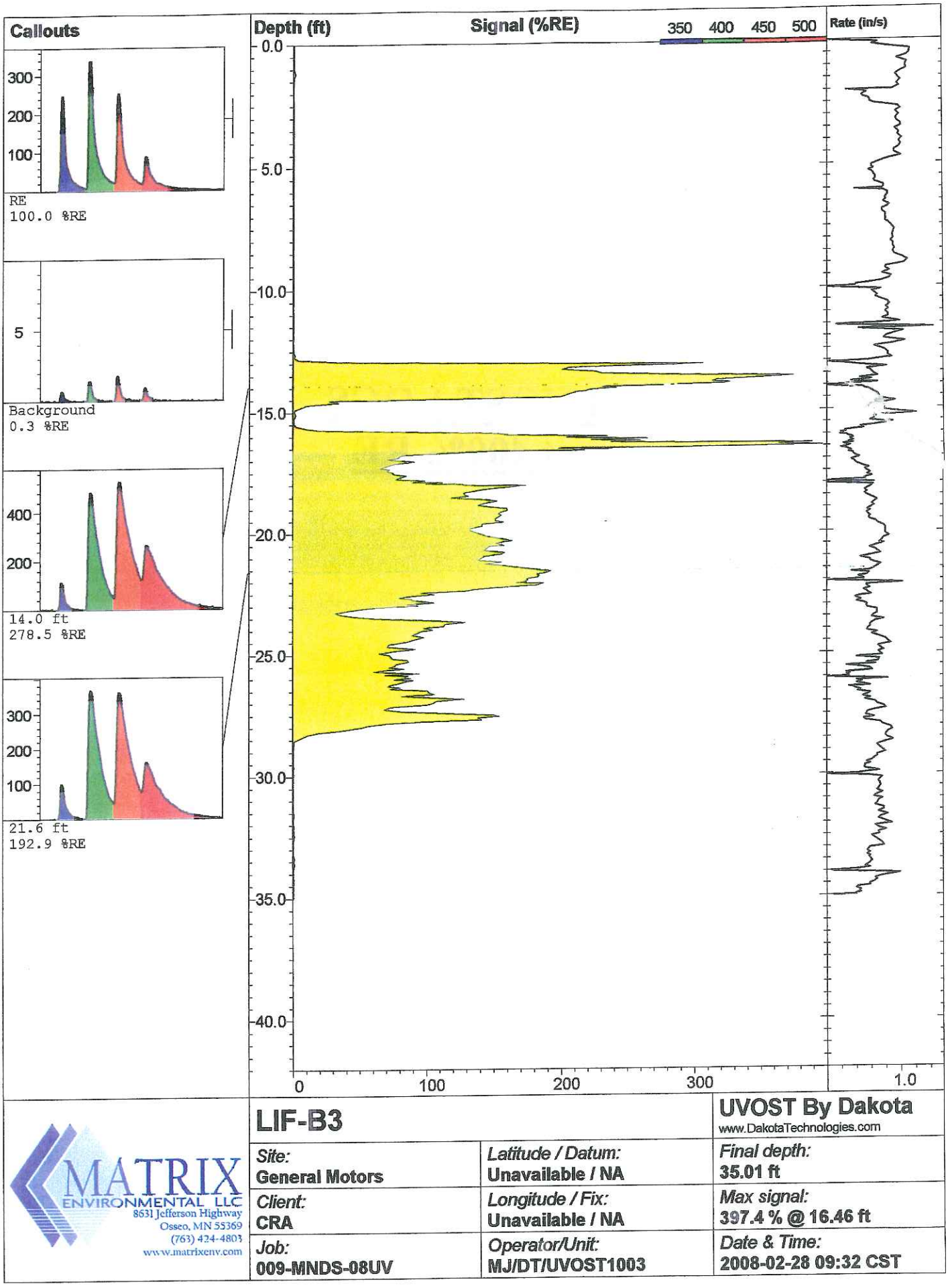
LIF-H4

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **130.9 % @ 28.99 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 14:08 CST**

UVOST LOGS
at 400% RE



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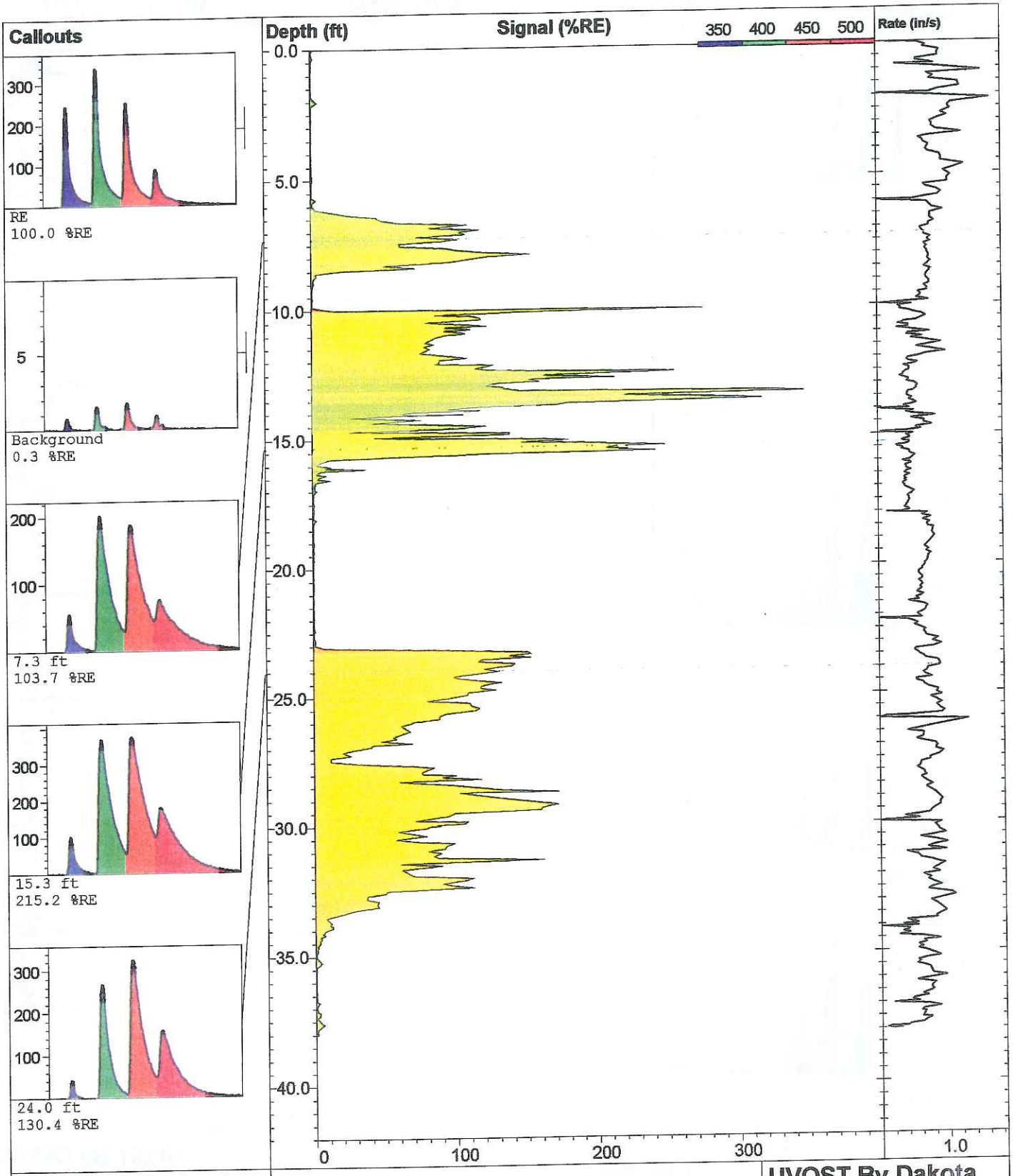
LIF-B3

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.01 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **397.4 % @ 16.46 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 09:32 CST**



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LIF-B4

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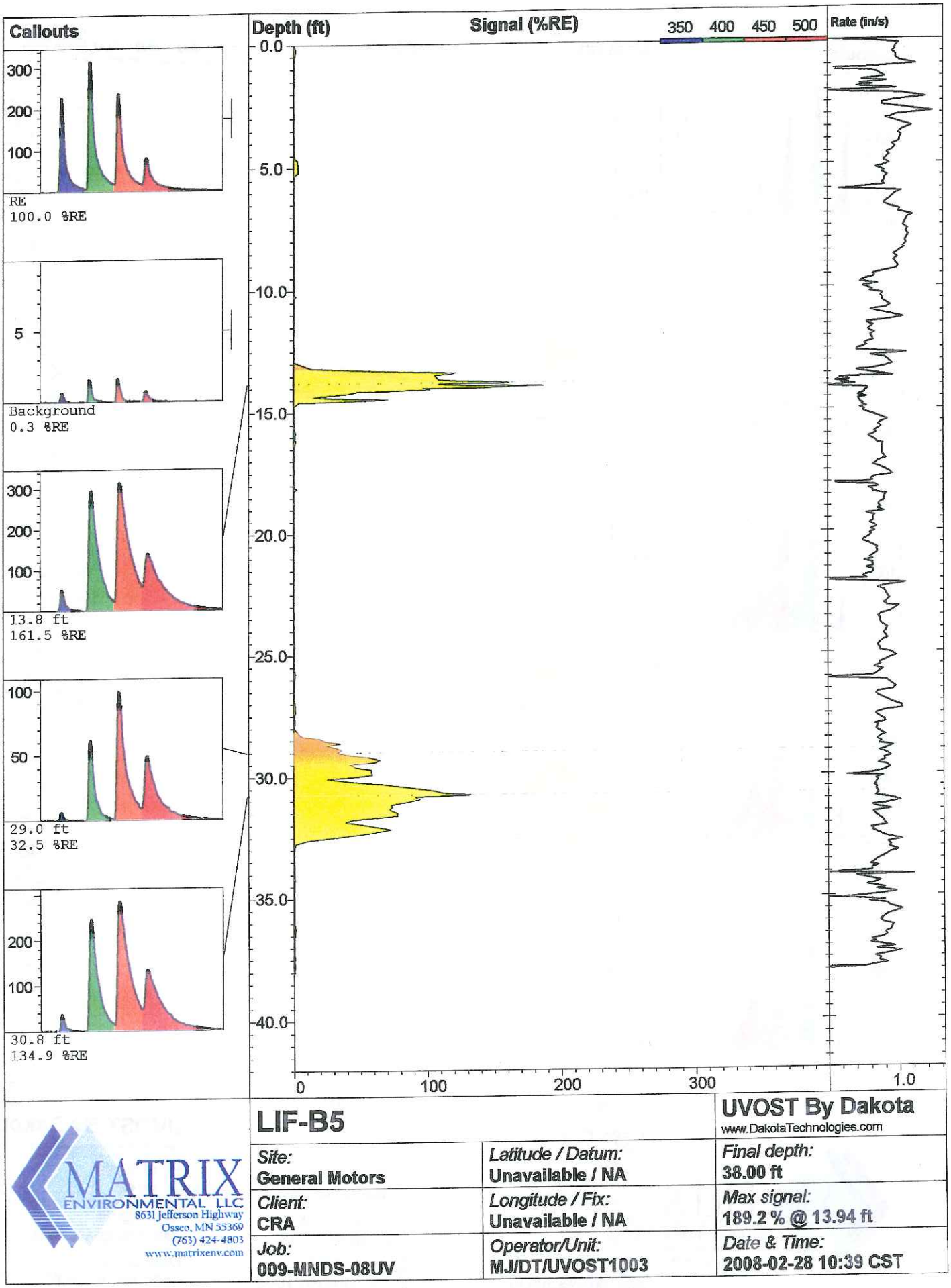
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **348.5 % @ 13.28 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 10:08 CST**



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LIF-B5

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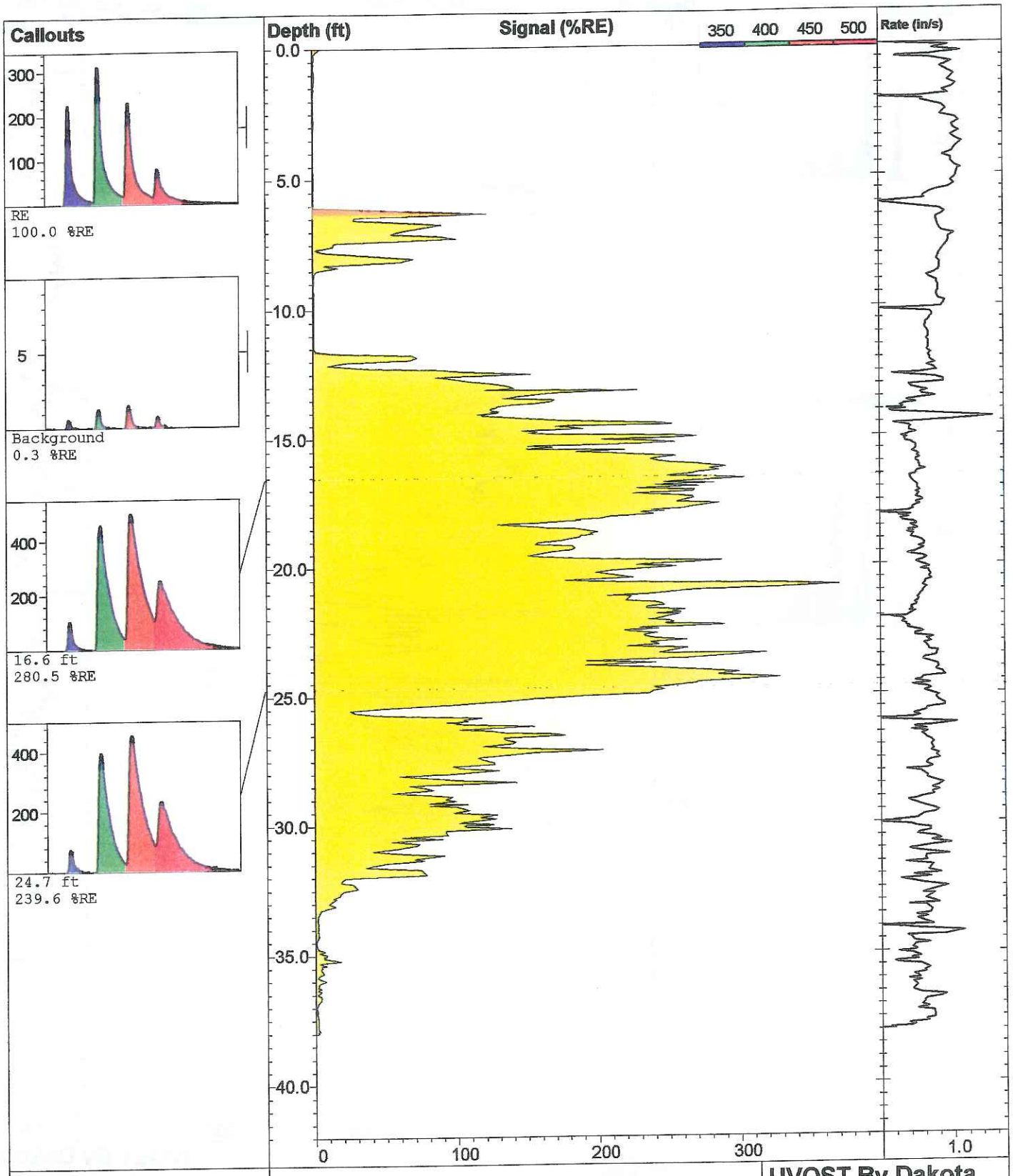
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **189.2 % @ 13.94 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 10:39 CST**



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LIF-C5

UVOST By Dakota
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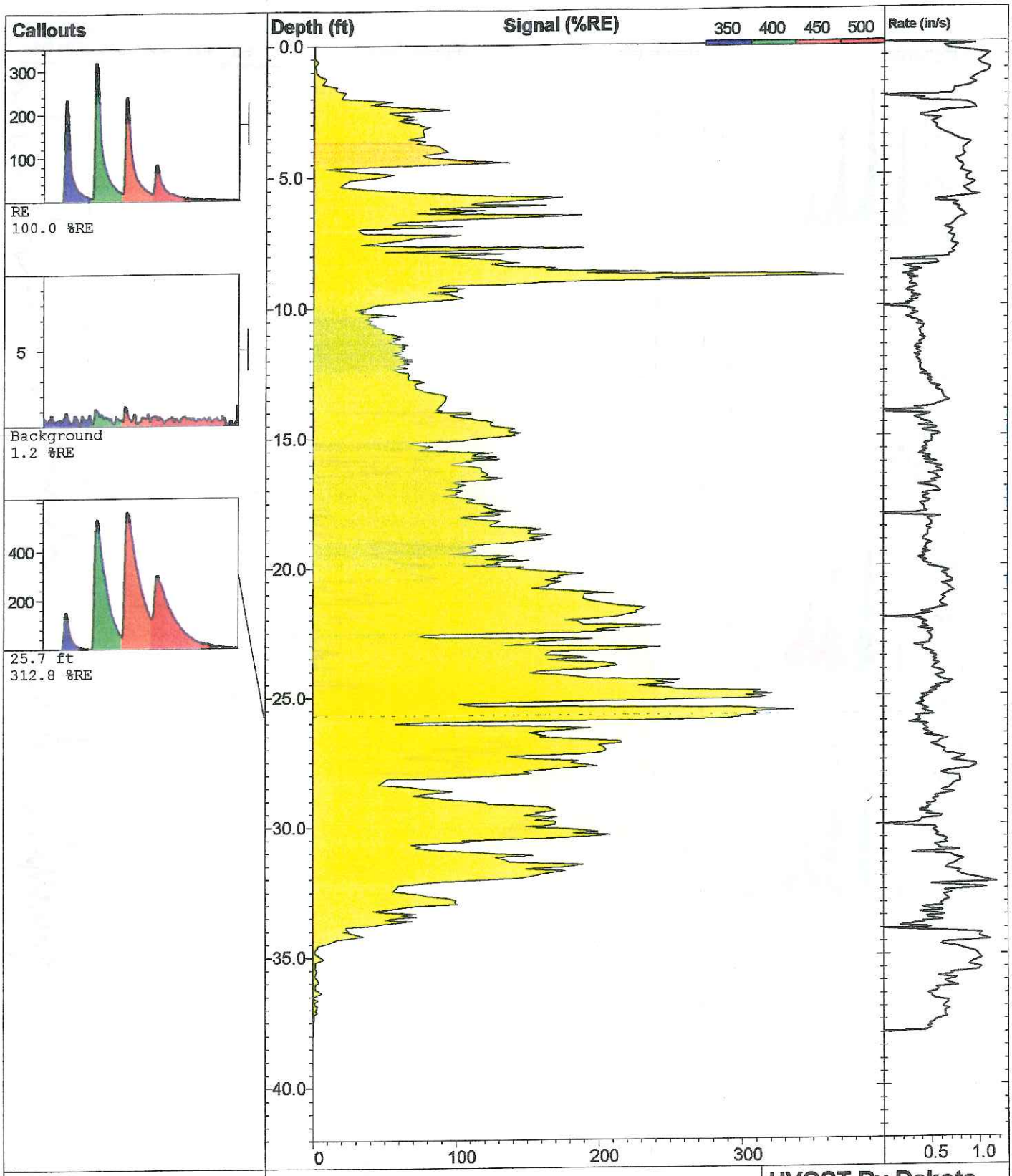
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **370.4 % @ 20.78 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 11:09 CST**



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LIF-D4

UVOST By Dakota
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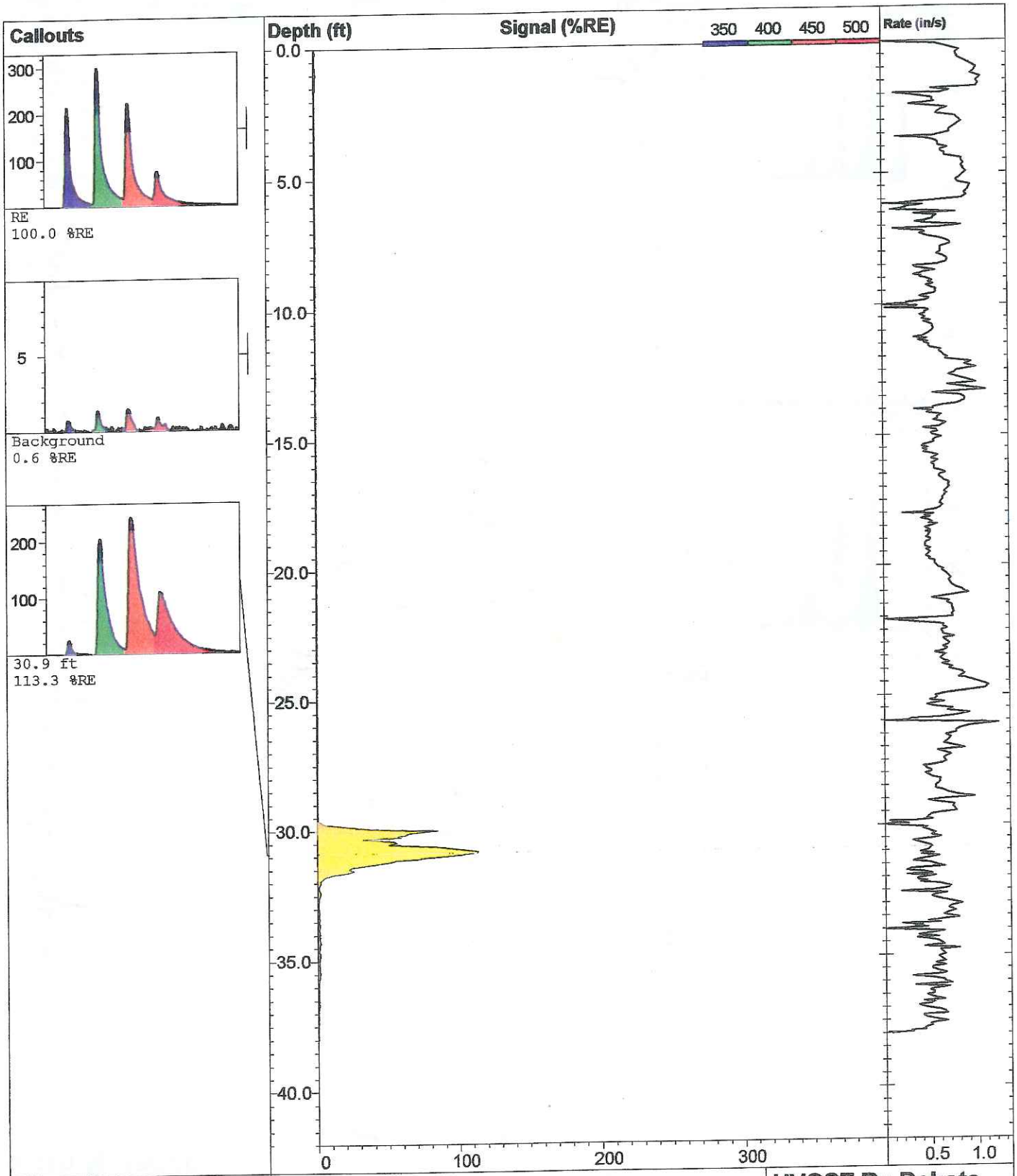
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **371.5 % @ 8.85 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 14:37 CST**



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LIF-E2

UVOST By Dakota
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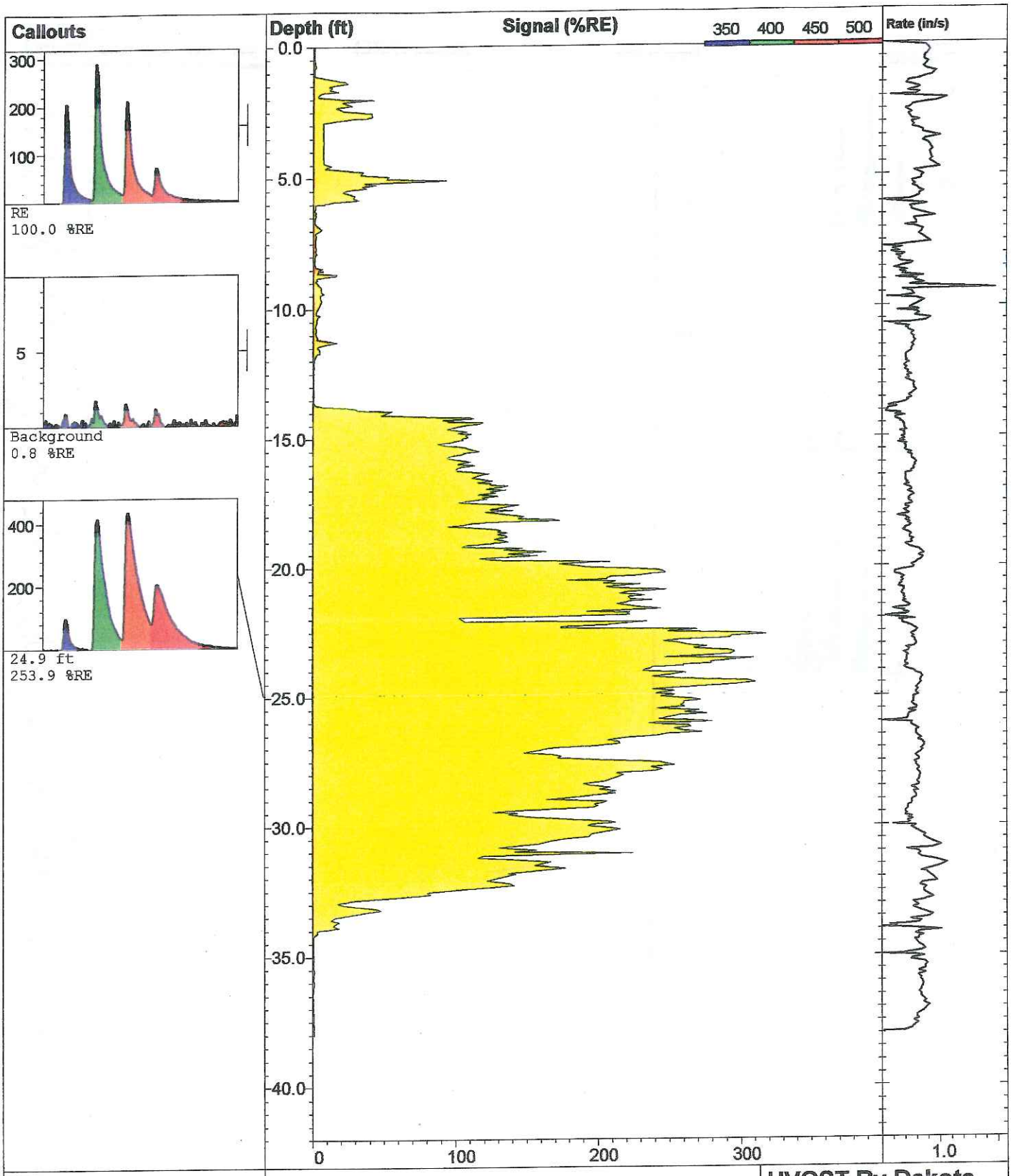
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **113.7 % @ 30.82 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 10:56 CST**



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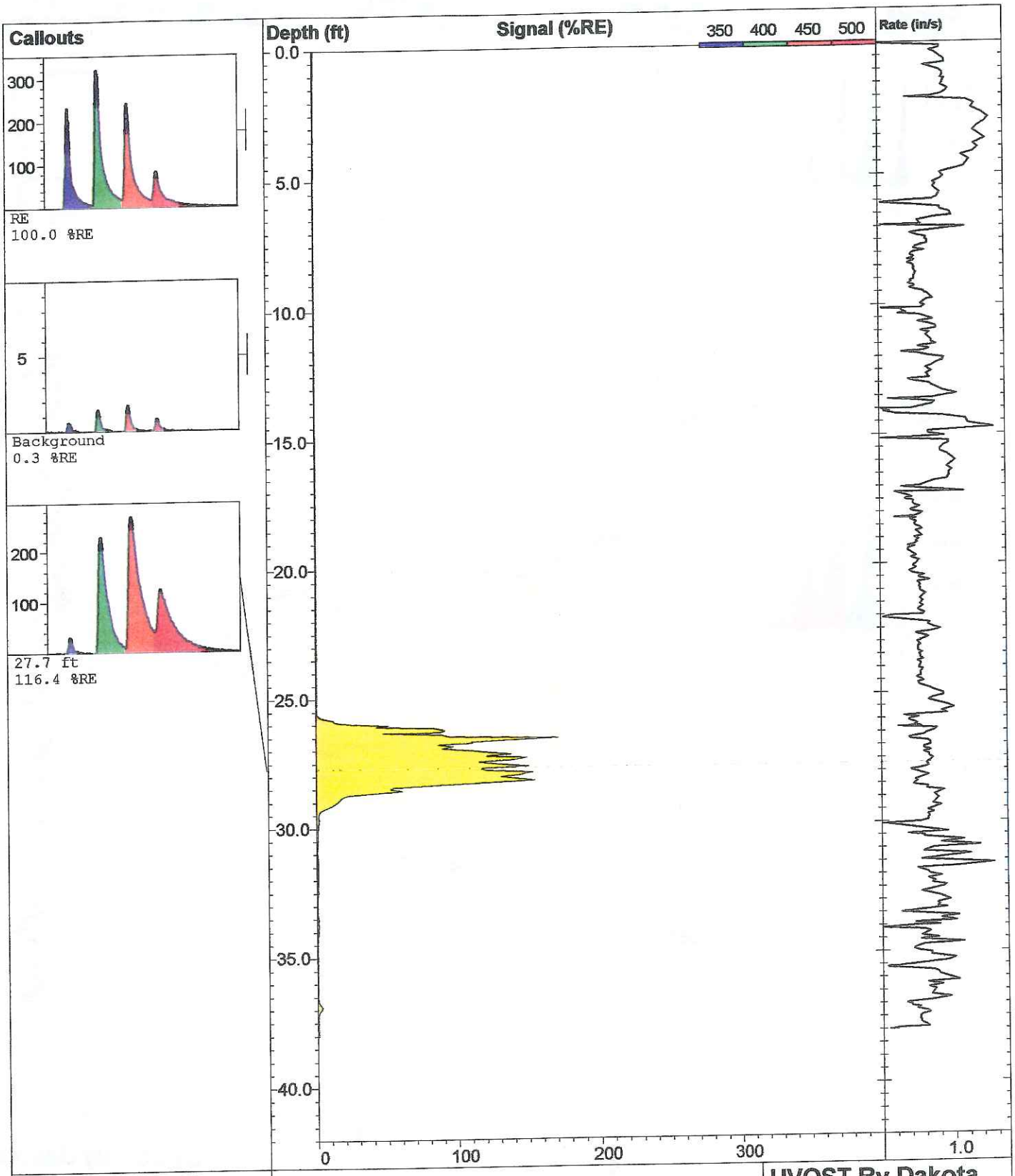
LIF-E4

UVOST By Dakota
www.DakotaTechnologies.com

Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **318.2 % @ 22.61 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 11:50 CST**



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LIF-F2

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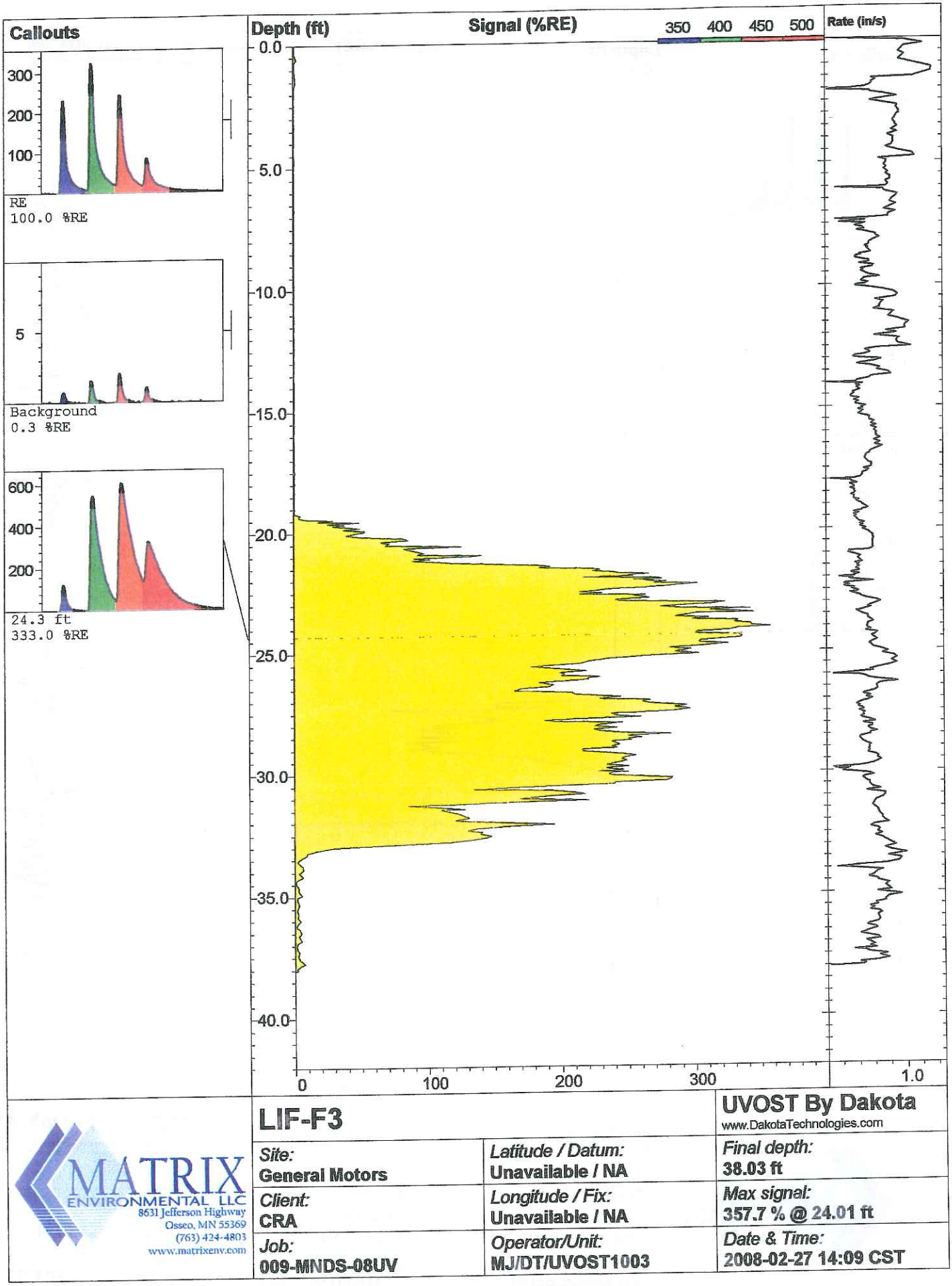
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **172.7 % @ 26.57 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 11:30 CST**



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LIF-F3

UVOST By Dakota
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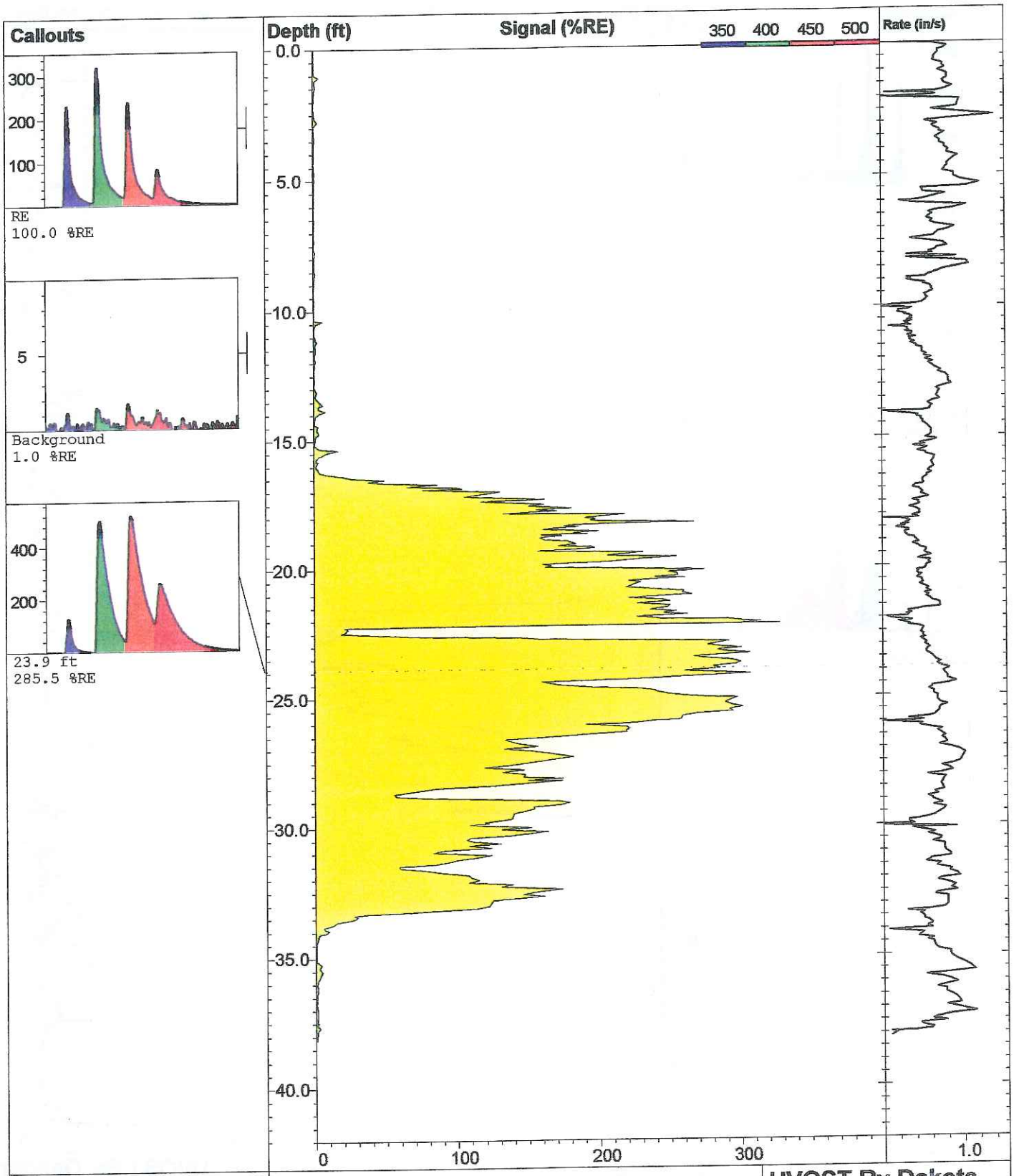
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.03 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **357.7 % @ 24.01 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 14:09 CST**



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LIF-F4

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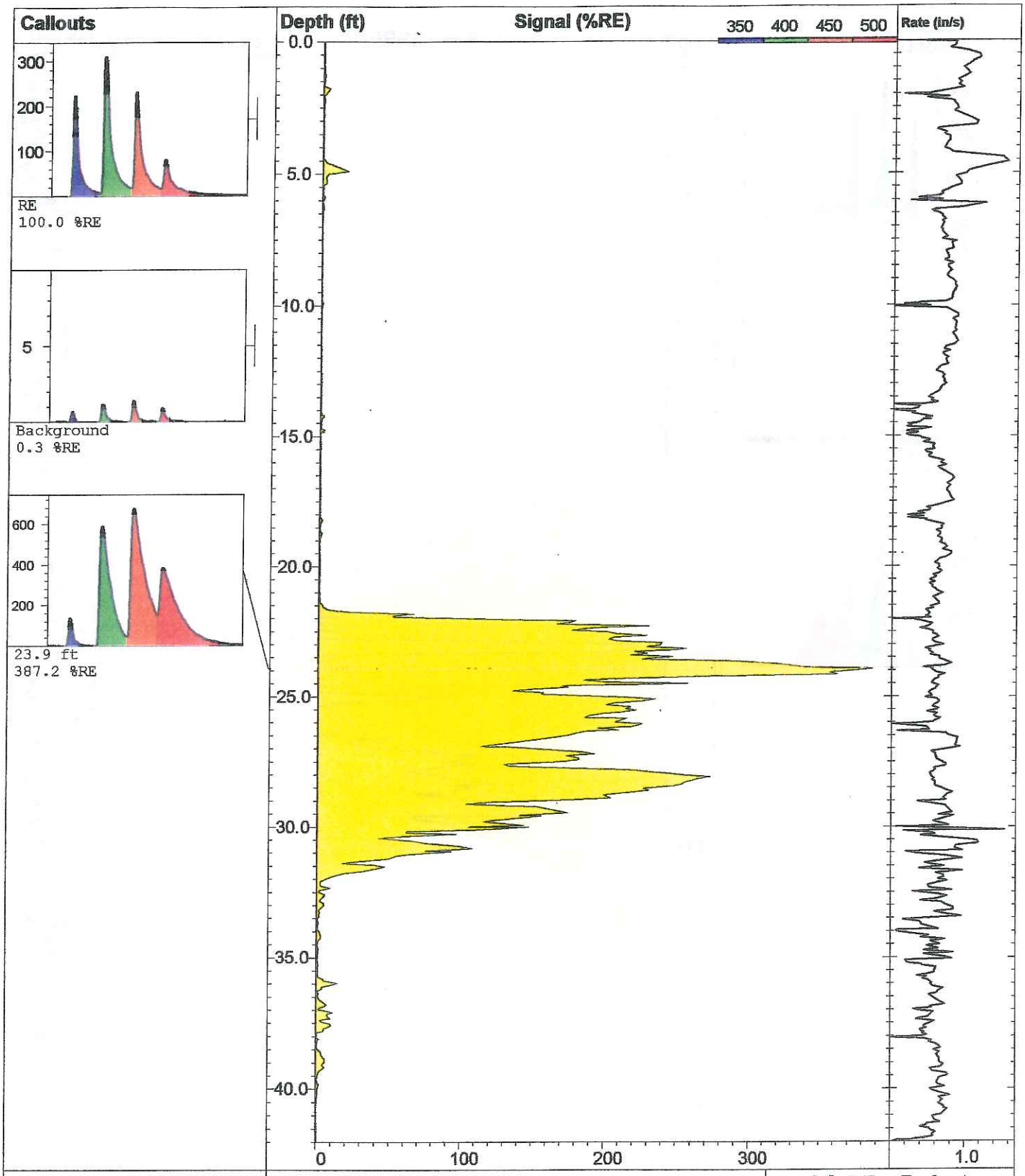
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.12 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **329.2 % @ 22.17 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 15:24 CST**



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LIF-F5

UVOST By Dakota
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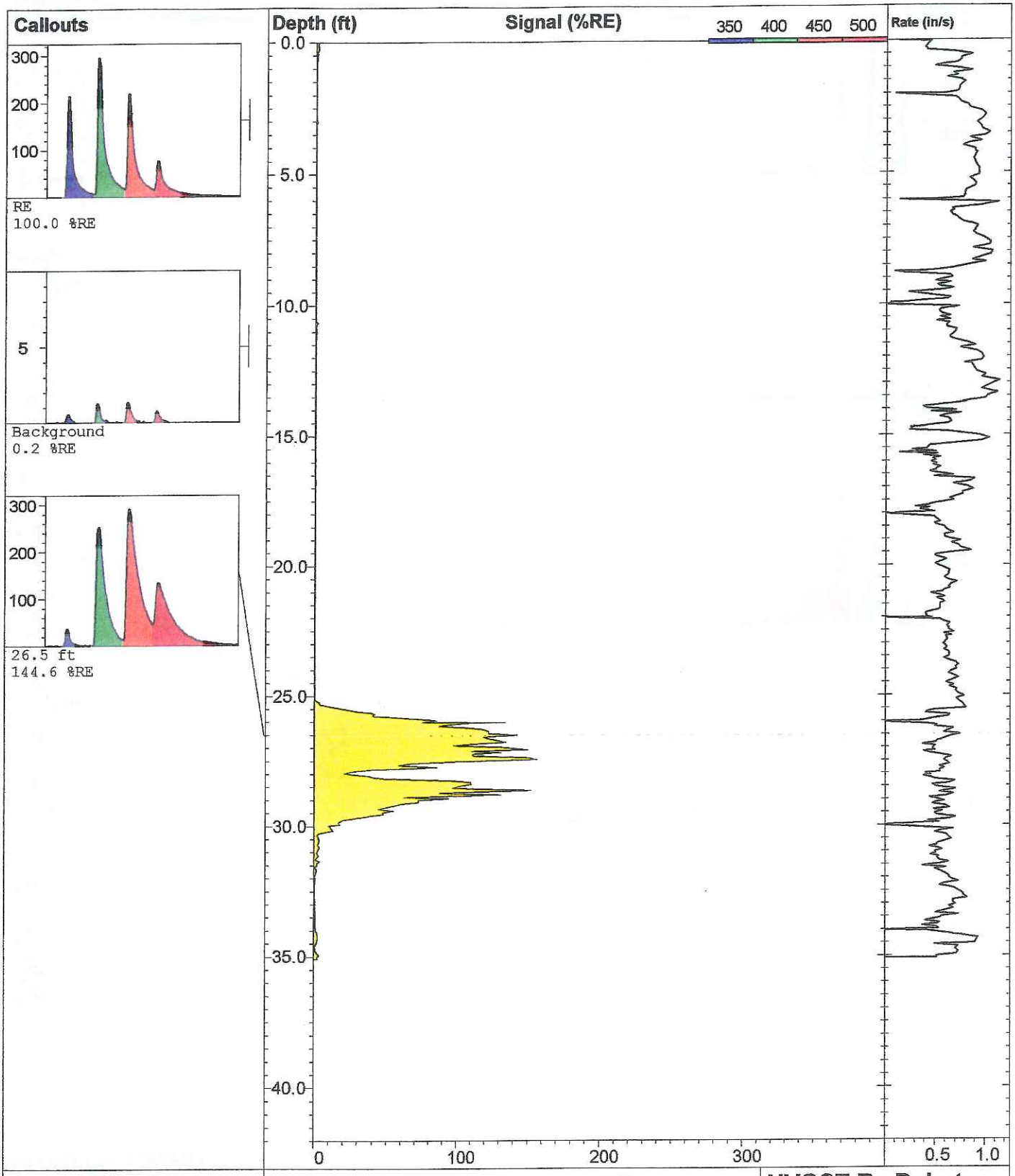
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **42.01 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **387.2 % @ 23.94 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 14:44 CST**



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LIF-G2

UVOST By Dakota
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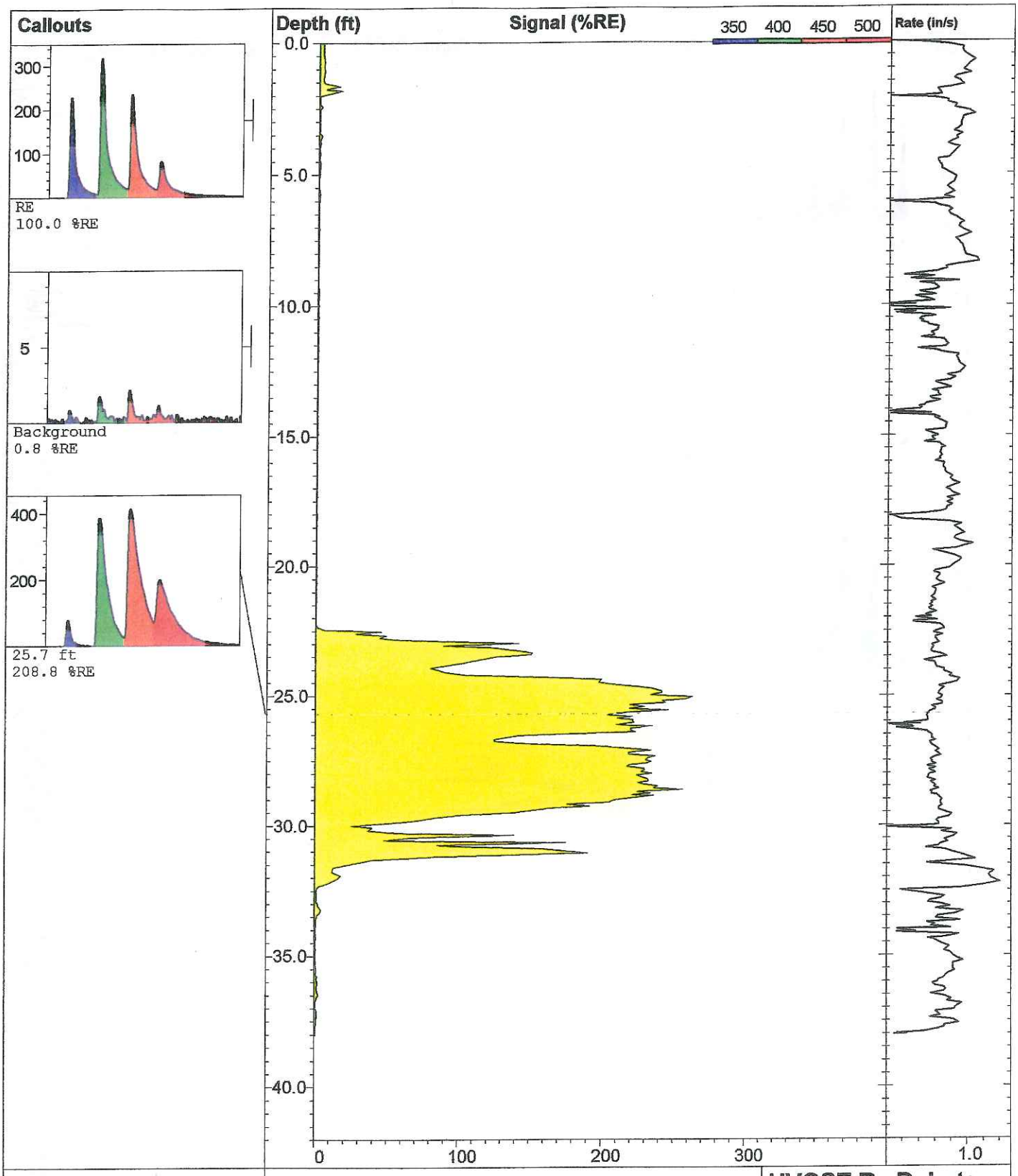
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.10 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **156.6 % @ 27.46 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 16:01 CST**



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LIF-G4

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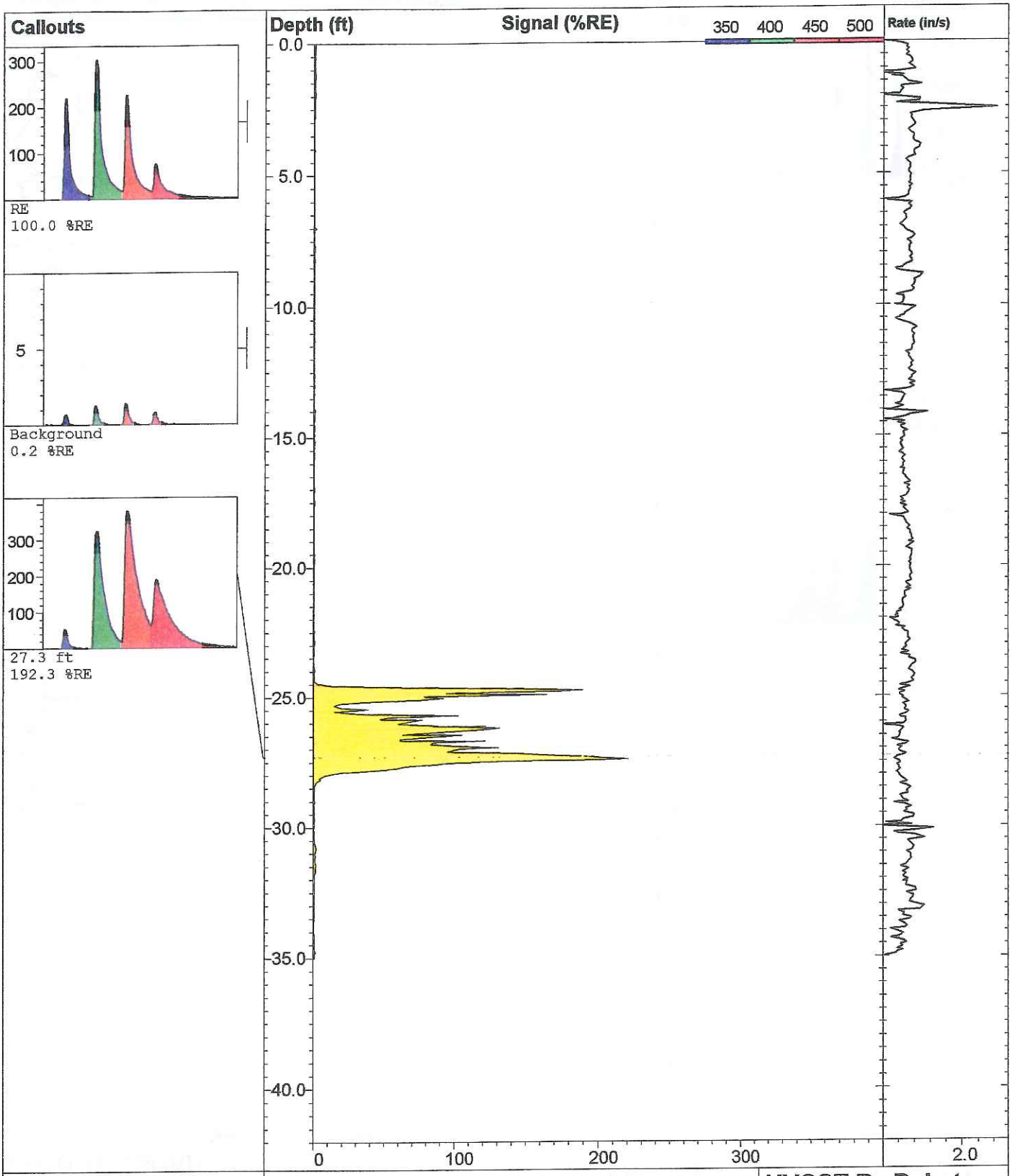
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.03 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **263.5 % @ 25.05 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-26 16:08 CST**



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LIF-G5

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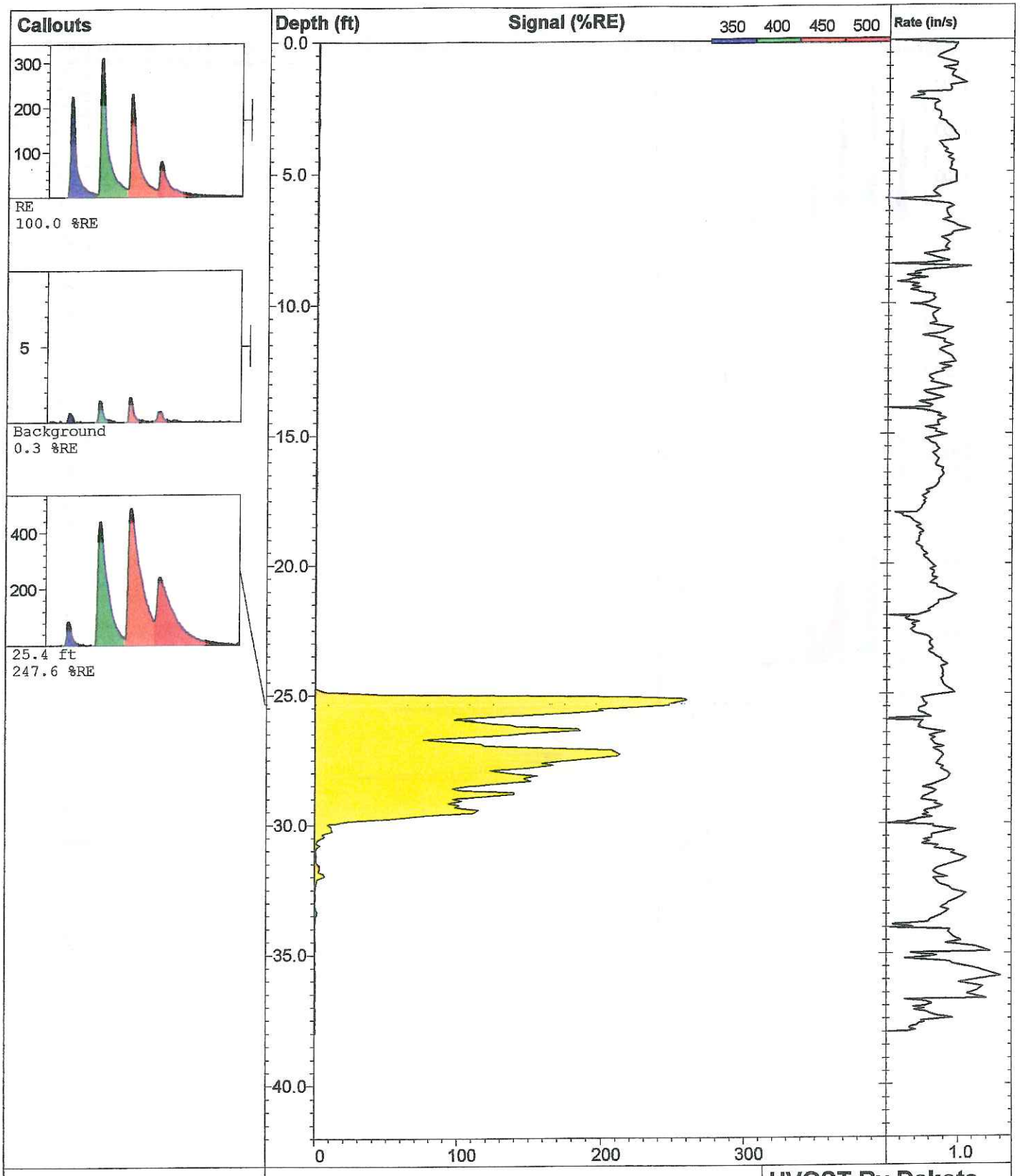
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **221.1 % @ 27.40 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-27 15:24 CST**



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LIF-H3

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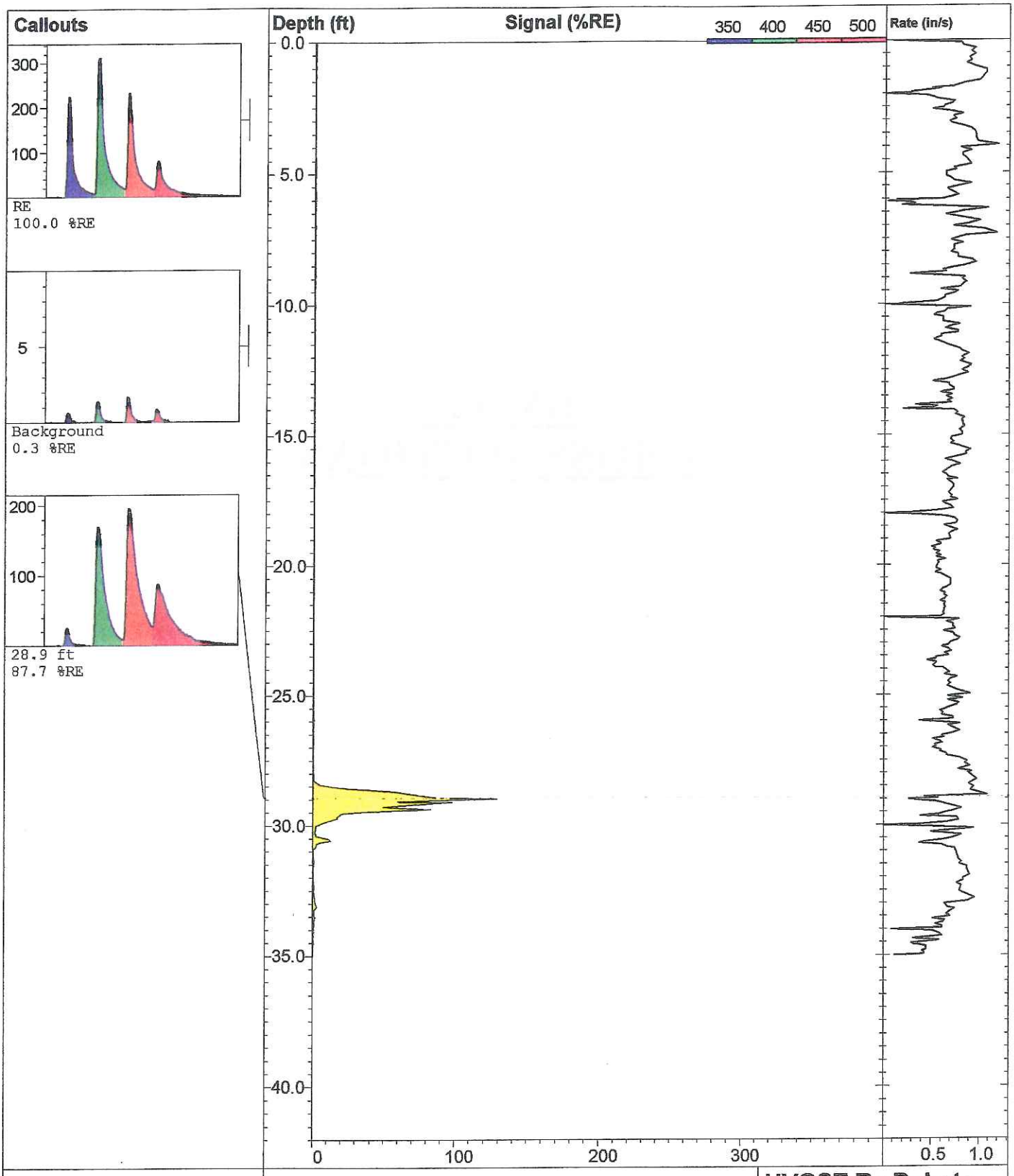
Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **38.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **260.0 % @ 25.23 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 14:40 CST**



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LIF-H4

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Site: **General Motors**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **35.00 ft**
Client: **CRA**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **130.9 % @ 28.99 ft**
Job: **009-MNDS-08UV**	*Operator/Unit:* **MJ/DT/UVOST1003**	*Date & Time:* **2008-02-28 14:08 CST**

UVOST
CROSS SECTIONS

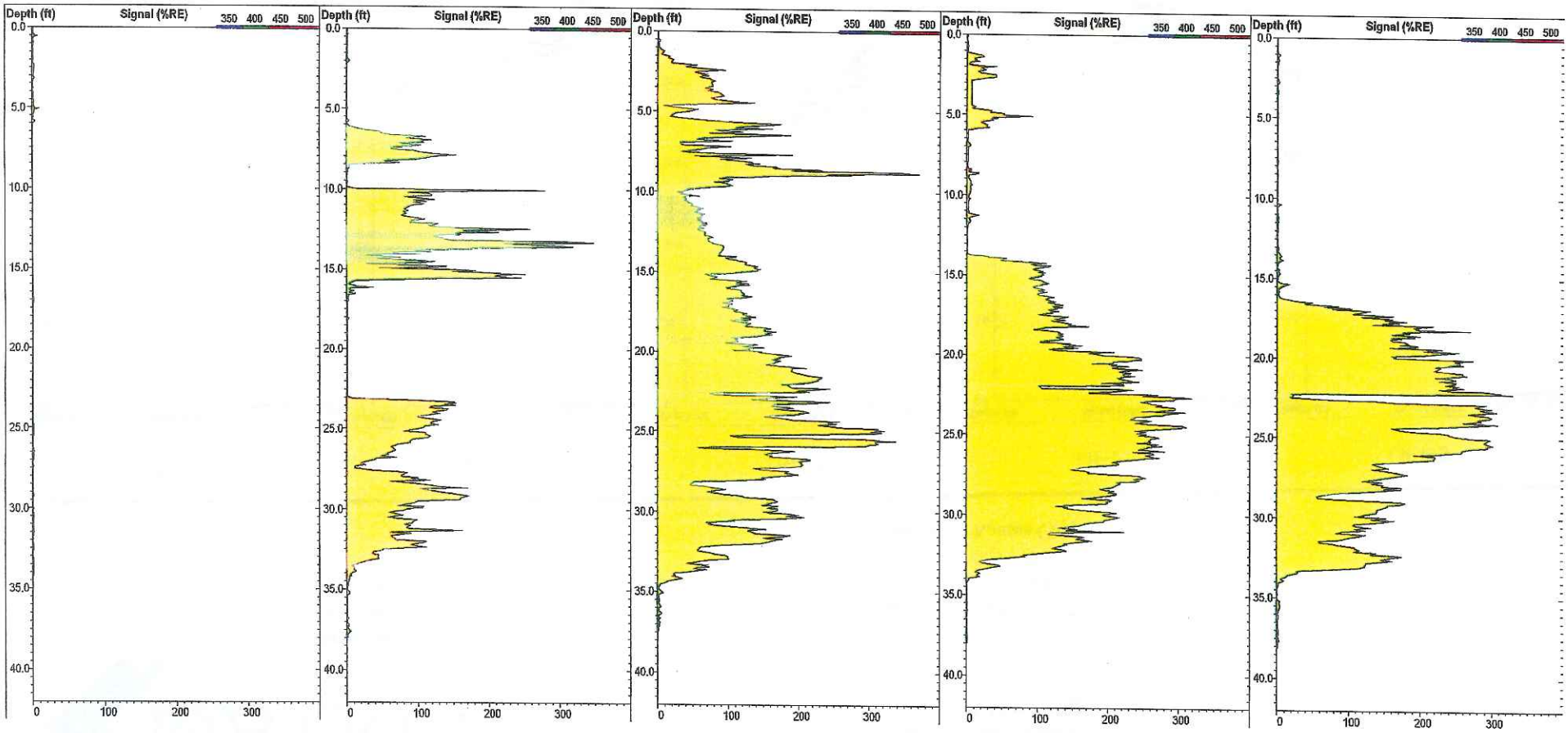
MATRIX ENVIRONMENTAL LLC

8631 Jefferson Highway
Osseo, Minnesota 55369
(763) 424-4803
fax (763) 424-9452

Client: CRA, Inc.
Contact: John Greetis
Services: UVOST Logging

Date: 2/25/08 - 2/29/08
Project: GM Plant
Project #: 009-MNDS-08UV
Address: Kansas City, KS

LIF-A4 LIF-B4 LIF-D4 LIF-E4 LIF-F4



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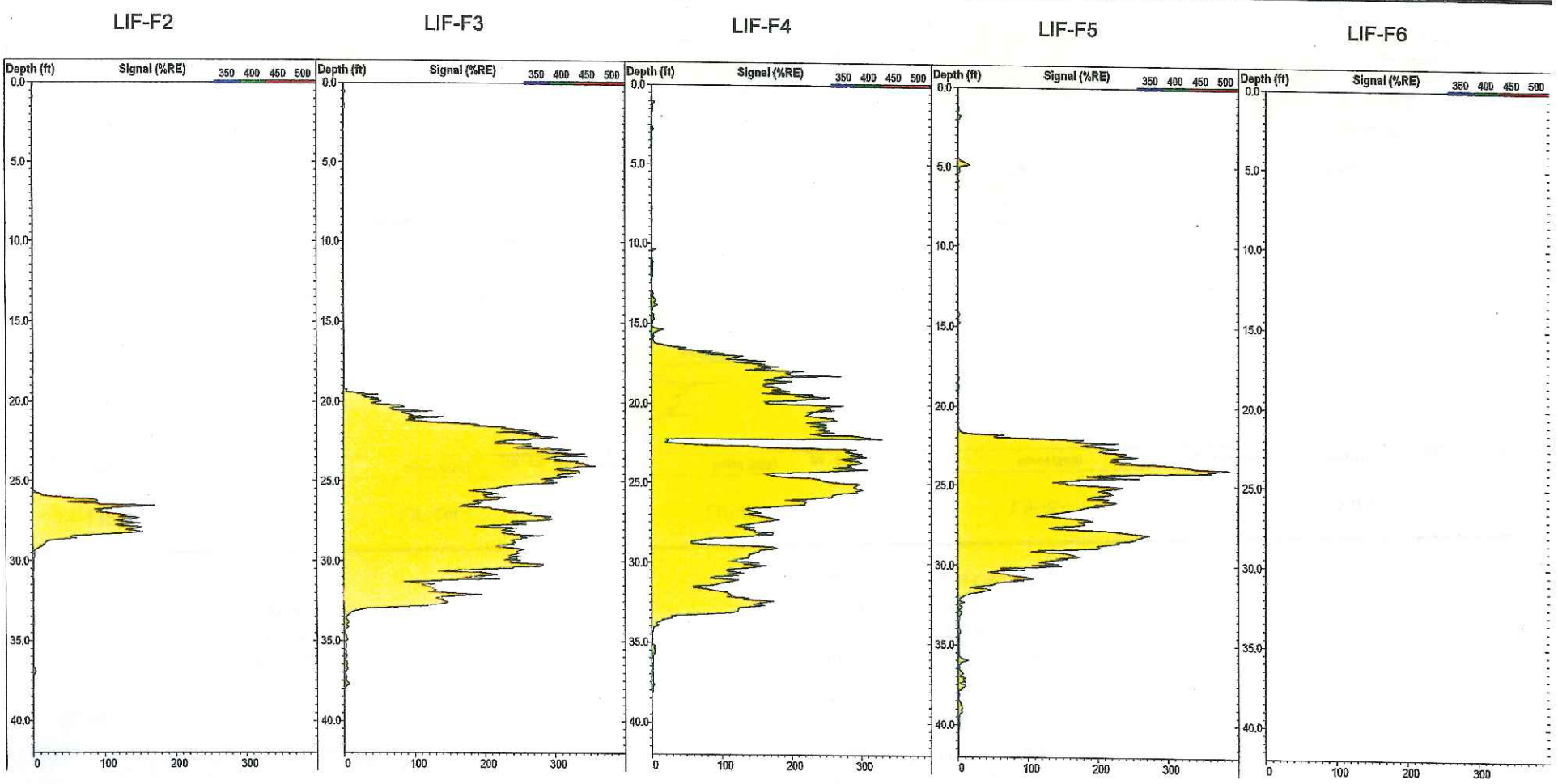
fax (763) 424-9452

Client: CRA, Inc.
Contact: John Greetis
Services: UVOST Logging

Date: 2/25/08 - 2/29/08
Project: GM Plant
Project #: 009-MNDS-08UV
Address: Kansas City, KS



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LIF-D4 LIF-E4 LIF-F4 LIF-G4 LIF-H4