

From: [Yu, Olivia, EMNRD](#)
To: [Mark Larson](#); [Billings, Bradford, EMNRD](#)
Cc: ["ggfenton@aol.com"](#); ["David Plaisance"](#); ["paladinmid@suddenlink.net"](#)
Subject: RE: RP-1-4666 - Remediation Report, East Caprock SWD - Posey A5 Battery, Lea County, New Mexico, August 6, 2017
Date: Friday, September 8, 2017 7:44:00 AM

Mr. Larson:

NMOCD grants backfill approval for 1RP-4666. Review of the remediation report is still pending. Please be advised that the remediation report (>100 MB) is too large to upload to OCD online. If possible, optimized and/or reduce the resolution of the images (e.g., Waste manifest tickets do not have to be in color).

Thanks,
Olivia

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Thursday, August 17, 2017 10:22 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: 'ggfenton@aol.com' <ggfenton@aol.com>; 'David Plaisance' <dplaisance@paladinenergy.com>; 'paladinmid@suddenlink.net' <paladinmid@suddenlink.net>
Subject: FW: RP-1-4666 - Remediation Report, East Caprock SWD - Posey A5 Battery, Lea County, New Mexico, August 6, 2017

Olivia/Brad,

Just following up on the approval status for the remediation report for 1RP-4666? Also, the report states (page 6) that the monitoring wells were "secured with locking steel above-grade covers anchored in concrete measuring about 3 x 3 x 0.5 feet thick". The wells are temporary completions without the above grade covers but are secured with compression (J Plug) caps. The attached analytical reports were accidentally omitted from the report and include soil samples collected on July 19, 2017 (PBEL Work Order No. 7G21001, July 25, 2017) and groundwater samples collected from TMW-1 and TMW-2 on June 7, 2017 (DHL Work Order No. 17060991, June 14, 2017) and TMW-3 on June 26, 2017 (DHL Work Order No. 1706302, July 3, 2017). Please accept my apology for this omission. Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Respectfully,

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 205
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Office – 432-687-0901
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Fax – 432-687-0456

mark@laenvironmental.com



“Serving the Permian Basin Since 2000”

From: Mark Larson

Sent: Sunday, August 06, 2017 7:39 PM

To: 'Yu, Olivia, EMNRD'; 'Billings, Bradford, EMNRD'

Cc: 'ggfenton@aol.com'; 'David Plaisance'; 'paladinmid@suddenlink.net'

Subject: RE: RP-1-4666 - Remediation Report, East Caprock SWD - Posey A5 Battery, Lea County, New Mexico, August 6, 2017

Olivia,

Larson & Associates, Inc. (LAI), on behalf of Paladin Energy Corp., submits the above referenced report to document remediation and groundwater assessment activities for 1RP-4666 (East Caprock SWD – Posey A5 Battery). Please use the link below to download an electronic copy of the report. Paladin requests approval to backfill the excavations according to procedures presents in the report and to plug the monitoring wells. Your approval of this request is appreciated. Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Link: <https://files.acrobat.com/a/preview/40011fbf-18d1-4646-bcd0-4d844e04a735>

Respectfully,

Mark J. Larson, P.G.

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“Serving the Permian Basin Since 2000”

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Friday, July 28, 2017 2:37 PM
To: Mark Larson; Billings, Bradford, EMNRD
Cc: 'ggfenton@aol.com'; 'David Plaisance'; 'paladinmid@suddenlink.net'
Subject: RE: RP-1-4666

Mr. Larson:

Bradford and I conversed about the below update regarding 1RP-4666. Although the provided data is appreciated, for documentation, please submit a formal report stating the proposed remedial actions. NMOCD strongly encourages the Responsible Operator to consider lining the tank battery completely.

Thanks,
Olivia

From: Mark Larson [<mailto:Mark@laenvironmental.com>]
Sent: Thursday, July 27, 2017 1:17 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: 'ggfenton@aol.com' <ggfenton@aol.com>; 'David Plaisance' <dplaisance@paladinenergy.com>; 'paladinmid@suddenlink.net' <paladinmid@suddenlink.net>
Subject: FW: RP-1-4666

Olivia,

Thank you for taking time to on Tuesday to meet and discuss remediation at the Paladin Energy Corporation (Paladin), East Caprock SWD and Posey A5 Battery (Site). As discussed during the meeting, Paladin has remediated soil from areas around the Site where releases of crude oil have impacted soil to the most restrictive recommended remediation action level (RRAL) of 100 milligrams per kilogram (mg/Kg) for total petroleum hydrocarbons (TPH) required by the New Mexico Oil Conservation Division (OCD) assuming depth to groundwater approximately 30 feet below ground surface (bgs). Chloride concentrations in in-situ soil from samples collected from the bottom of excavations ranges from 62.2 mg/Kg to 2,200 mg/Kg. Paladin proposes to install 20 mil thickness liners in the bottom of the excavation at approximately 4 feet bgs and backfill to surface with caliche. The OCD had concern for the in-situ chloride concentration in the north sidewall sample (4,620 mg/Kg) collected at 4 feet bgs from the excavation at SB-6 and was going to defer to Bradford Billings with OCD in Santa Fe for guidance? Table 1 presents the remediation soil sample analytical data summary. Figure 4 presents the locations for soil borings and excavations.

On June 6, 2017, two (2) monitoring wells (TMW-1 and TMW-2) were installed east and southeast (hydraulically down gradient) of the Site. On June 23, 2017, monitoring well TMW-3 was installed about 260 feet west and north (hydraulically up gradient or background) to the Site. The monitoring wells were drilled between about 46.82 feet (TMW-1) and 47.15 feet (TMW-2 and TMW-3) feet bgs and are screened across the aquifer. The wells terminate in the Triassic-age shale (Dockum Group) which is the lower confining unit for the aquifer. Table 2 presents the monitoring well drilling and completion summary. Figure 4 presents the monitoring well location map. Groundwater flow is

from west-northwest to east-southeast at a gradient of about 0.013 feet per foot. Figure 5 presents a groundwater potentiometric map for July 5, 2017. On June 7, 2017 and June 26, 2017, LAI personnel collected groundwater samples from wells TMW-1 and TMW-2 (June 7, 2017) and TMW-3 (June 26, 2017). The samples were analyzed for volatile organics (BTEX), cations (magnesium, calcium, potassium and sodium), anions (alkalinity, sulfate and chloride) and total dissolved solids (TDS). Chloride was above the New Mexico Water Quality Control Commission (WQCC) domestic water quality standard of 250 milligrams per liter (mg/L) in all wells including up gradient well TMW-3 (5,650 mg/L). TDS was above the WQCC domestic water quality standard of 1,000 mg/L in all wells including up gradient well TMW-3 (13,700 mg/L). Table 3 presents the groundwater sample organic analytical data summary. Table 4 presents the groundwater sample inorganic data summary. Figure 6 presents the chloride concentrations in groundwater map. Figure 7 presents the TDS concentrations in groundwater map.

In summary, the background (up gradient) TDS concentration (TMW-3) is above the limit (10,000 mg/L) established by the New Mexico Water Quality Control Commission (WQCC) for present and potential future use as domestic and agricultural water supply according to 20.6.2.3101 NMAC, therefore, Paladin believes no additional soil excavation is necessary and proposes to fill the excavations to a depth of about 4 feet bgs with caliche, install a 20 mil thickness liner in the bottom of the excavations and continue filling the excavations to surface with caliche. Paladin requests approval to plug the monitoring wells according to Office of the State Engineer (OSE) requirements. Paladin will submit a final report with to include the laboratory sample analysis, boring logs and well completion diagrams, photographs and final C-141 to the OCD upon completion of this work. Your approval is requested. Please contact Mickey Horn with Paladin at (432) 634-6599 or paladinmidland@suddenlink.net or me if you have questions.

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