

From: Kevin Elrod
To: [Yu, Olivia, EMNRD](#); [Kevin Elrod](#)
Subject: Re: Annapurna Spill / Clean up Summary
Date: Tuesday, October 24, 2017 5:46:43 AM

Good morning Olivia,

I have discussed the questions below with Alan, who has been out of the office. I would like to discuss these questions with you when you get a chance. Please let me know when a good time to go over any questions that remain on the Annapurna.

The first round of samples were taken before the clean up had begun, outside of vacuum trucking the free liquids. The second round of samples were taken below the excavated depths. So S1A 1' taken in August would be at the same depth as S1A 2' in July, since the approximate 1 foot of soil was removed.

Each sample was a discrete sample taken at the bottom of the specified depth.

If you have any questions we can go over these whenever you get a chance.

Thank you,

Kevin Elrod
Kane Environmental Engineering, Inc.
Registration Number F-2355
(979) 450-8307
kevinjelrod@comcast.net

----- Original Message -----

From: Kevin Elrod
To: Olivia Yu, EMNRD
Sent: October 23, 2017 at 6:53 AM
Subject: Re: Annapurna Spill / Clean up Summary

Good morning Olivia,

I have addressed most of the questions below. I am reviewing the 3rd and the final comment further with what was done/found in the field, and I will get back to you ASAP.

Kevin Elrod
Kane Environmental Engineering, Inc.
Registration Number F-2355
(979) 450-8307
kevinjelrod@comcast.net

From: [Yu, Olivia, EMNRD](#)
To: [Kevin Elrod](#)
Cc: [alan kane](#)
Subject: RE: Annapurna Spill / Clean up Summary
Date: Tuesday, October 17, 2017 1:26:00 PM

Mr. Elrod:

There are a number of discrepancies regarding the release for 1RP-4737, necessitating clarification:

1. The photos do not indicate that 1 foot of soil was removed from the entire impacted area and placed on a plastic liner on site.
2. If 1 ft. soil was removed, is the implication that the provided data is shifted 1 ft. lower? In other words, samples taken at 1 ft. is actually 2 ft. bgs?
3. The data presented in the July 2017 report definitively demonstrate chloride levels for S1A at 2 ft. and S2A at 1 ft. are above NMOCD permissible chloride levels of 600 mg/kg.
4. The report from August 2017 stated that samples were taken at 1 ft, not 0-1 ft. Is the inference that the a core of 1 ft. in length was homogenized and sent to the laboratory for analyses?

Please be advised that the conventional remedial activity is to remove impacted soil up to the depths that laboratory analyses of soil samples show within permissible levels. Since the areas represented by S1A and S2A show chloride-impacted soil at 2 ft. and 1 ft. (or 3 ft. and 2 ft. bgs), respectively, then NMOCD requires soil to be removed to this depth with confirmation bottom and sidewall samples for these areas.

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Kevin Elrod [mailto:kevinjelrod@comcast.net]
Sent: Tuesday, October 10, 2017 9:27 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: alan kane <alanjkane@comcast.net>
Subject: Annapurna Spill / Clean up Summary

Olivia,

Below is a summary of the Annapurna spill, clean-up and sample event. Attached you will find a map depicting the location and sample sites.

Spill/Cleanup:

- On June 15th, 2017 approximately 100 barrels leaked out from a dump valve in the production separator.
- Vacuum trucks were dispatched to remove any free liquids.
- Kane visited the site on June 16th to discuss cleanup and recommendations
- There were no notable rain events between the time of the spill and excavation.
- The top foot soil was removed from all of the stained areas. Soil was sent to disposal.

Kane Sampling

- Sampled at the locations identified in the map on June 28th, 2017 at a depth of 1 ft. (Results were below cleanup thresholds)
- Returned on August 8th, 2017 and sampled again at each area at depths of 0 – 1 ft. and 5 ft. (Results were below cleanup thresholds)
- Groundwater is estimated to be at 200+ ft. below surface. Nearest surface water is roughly 1/4 of a mile away.

Let me know if you have any questions.

Thank you,

Kevin Elrod
Kane Environmental Engineering, Inc.
Registration Number F-2355
(979) 450-8307
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From: Kevin Elrod
To: [Yu, Olivia, EMNRD](#)
Subject: Re: Rockcliff Amended Annapurna Report 1RP-4737
Date: Tuesday, October 3, 2017 1:37:46 PM
Attachments: image001.png

Olivia,

Can you please give me a call when you get a moment? I would like to discuss the Annapurna when you have time.

Thank you,

Kevin Elrod

Kane Environmental Engineering, Inc.

Registration Number F-2355

(979) 450-8307

kevinjelrod@comcast.net

From: [Yu, Olivia, EMNRD](#)
Sent: Wednesday, September 20, 2017 8:42 AM
To: [Kevin Elrod](#)
Cc: [Debbie Stratton](#) ; [Alan Kane](#)
Subject: RE: Fwd: Rockcliff Amended Annapurna Report 1RP-4737

Good morning Mr. Elrod:

Does this mean that the edges of the release area were not sampled? If so, then horizontal delineation was not conducted and thus, release characterization is not completed for 1RP-4737. If you have field tests, please provide.

Thanks,

Olivia

From: Kevin Elrod [<mailto:kevinjelrod@comcast.net>]
Sent: Tuesday, September 19, 2017 4:44 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Debbie Stratton <debbiestratton@comcast.net>; Alan Kane <alanjkane@comcast.net>
Subject: Re: Fwd: Rockcliff Amended Annapurna Report 1RP-4737

Olivia,

The excavated area was approximately 1 foot deep, making it impractical to take sidewall samples. The samples that were taken were bottom hole samples of the excavated area.

Please let me know if you have any questions.

Thank you,

Kevin Elrod

Kane Environmental Engineering, Inc.

Registration Number F-2355

(979) 450-8307

kevinjelrod@comcast.net

From: Olivia Yu, EMNRD

To: Alan Kane

Cc: Debbie Stratton

Sent: September 19, 2017 at 8:42 AM

Subject: RE: Rockcliff Amended Annapurna Report 1RP-4737

Dear Mr. Kane:

Thank you for the data on the additional delineation samples for 1RP-4737. As stated in the email dated August 4, 2017, bottom and sidewall confirmation samples were to be taken of the excavated area. Were these samples taken? If so, please submit laboratory results along with the remediation/closure report.

Thanks,

Olivia

From: Debbie Stratton [<mailto:debbiestratton@comcast.net>]

Sent: Wednesday, August 23, 2017 12:05 PM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Subject: Rockcliff Amended Annapurna Report 1RP-4737

Olivia,

Please review the attached amended report for Annapurna 20-1H. The site is owned by Rockcliff.

Debbie Stratton



Kane Environmental Engineering, Inc.

(281) 350-9339 - Office

(281) 450-5028 - Cell

(281) 350-3565 - Fax

[Email: debbiestratton@comcast.net](mailto:debbiestratton@comcast.net)

From: Debbie Stratton [<mailto:debbiestratton@comcast.net>]
Sent: Monday, July 24, 2017 11:30 AM
To: 'Yu, Olivia, EMNRD'
Subject: RE: Rockcliff Annapurna report 1RP-4737

Thank you so much!

Debbie Stratton



Kane Environmental Engineering, Inc.

(281) 350-9339 - Office

(281) 450-5028 - Cell

(281) 350-3565 - Fax

[Email: debbiestratton@comcast.net](mailto:debbiestratton@comcast.net)

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Monday, July 24, 2017 8:49 AM

From: [Yu, Olivia, EMNRD](#)
To: ["Alan Kane"](#)
Cc: [Elrod, Kevin; Billings, Bradford, EMNRD](#)
Subject: RE: Annapurna-Release
Date: Friday, August 4, 2017 12:46:00 PM

Mr. Kane:

NMOCD concurs with one clarification. Proposed sampling depths at 1 and 5 ft. for the additional 4 sample locations and at the 3 original locations (S1A, S2A, and S6A) are fine, but laboratory analyses must indicate a minimum of 2 ft. of permissible chloride levels maintained. Use field tests for guidance on which depths to send in for laboratory confirmation. For example, the original sample location S1A is above permissible chloride levels at 2 ft. If chloride levels \leq 600 mg/kg at 3 ft. bgs, laboratory results for 3 ft. bgs and 5 ft. bgs are required.

Your compliance with NMAC 19.5.29 is sincerely appreciated.

Thanks,
Olivia

From: Alan Kane [mailto:alanjkane@comcast.net]
Sent: Friday, August 4, 2017 11:51 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Elrod, Kevin <kevinjelrod@comcast.net>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Subject: Re: Annapurna-Release

Olivia, we will collect samples from 5 ft bgs. at S2A and S6A. We will collect bottom and sidewall samples from the areas that have been excavated. We will collect 2 additional samples between S2A and S3A at 50 ft intervals at depths of 1 ft. bgs and 5ft bgs. We will collect an additional sample near S1A at a depth of 1 ft bgs and 5 ft bgs. We will collect an additional sample near S6A at a depth of 1 ft bgs and 5 ft bgs.

Do you agree?

Thanks

Alan Kane

From: "Olivia Yu, EMNRD" <Olivia.Yu@state.nm.us>
To: "Alan Kane" <alanjkane@comcast.net>
Cc: "Kevin Elrod" <kevinjelrod@comcast.net>, "Bradford Billings, EMNRD" <Bradford.Billings@state.nm.us>
Sent: Friday, August 4, 2017 11:28:59 AM
Subject: RE: Annapurna-Release

Dear Mr. Kane:

Thank you for your prompt response regarding the questions about the corrective action plan for 1RP-4737. Given the information provided and based on the rapid timeline on implementation of corrective actions, NMOCD has revised the delineation conditions.

1. Deeper sample depths are not necessary at S3A, S4A, and S5A.
2. Vertical delineation must still be completed for S1A.
3. S2A and S6A must show that permissible chloride levels are maintained at 5 ft. bgs.
4. To complete horizontal characterization, given the release area on the sample map, please establish a minimum of 4 sample locations (2 between S3A and S2A; 1 near S1A; 1 near S6A). Distance interval should be < 50 ft. apart.
5. Please be advised that bottom and sidewall confirmatory lab analyses will be required after remedial activities for closure.

Please confirm or inform if additional clarifications are needed.

Thanks,
Olivia

From: Alan Kane [mailto:alanjkane@comcast.net]

Sent: Friday, August 4, 2017 8:07 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Elrod, Kevin <kevinjelrod@comcast.net>
Subject: Re: Annapurna-Release

Olivia, we hope to be back in the field to collect any additional samples next Tuesday. Do you have time to discuss my responses?

Thanks,

Alan Kane

From: "Alan Kane" <alanjkane@comcast.net>
To: "Olivia Yu, EMNRD" <Olivia.Yu@state.nm.us>
Cc: "Kevin Elrod" <kevinjelrod@comcast.net>
Sent: Thursday, August 3, 2017 2:49:31 PM
Subject: Re: Annapurna-Release

Olivia, the site diagram is attached. The drawing is to scale and has the impacted area and the sample points depicted.

Thanks

Alan Kane

From: "Alan Kane" <alanjkane@comcast.net>
To: "Olivia Yu, EMNRD" <Olivia.Yu@state.nm.us>
Cc: "Kevin Elrod" <kevinjelrod@comcast.net>, "Alan Kane" <alanjkane@comcast.net>
Sent: Thursday, August 3, 2017 8:51:47 AM
Subject: Re: Annapurna-Release

Olivia, I have provided my responses below in blue. I also attached the updated analytical results that includes MRO as requested. After your review can we set up a call to discuss the best path forward?

Thanks

Alan Kane

From: "Olivia Yu, EMNRD" <Olivia.Yu@state.nm.us>
To: "Alan Kane" <alanjkane@comcast.net>
Cc: "Kevin Elrod" <kevinjelrod@comcast.net>, "Bradford Billings, EMNRD" <Bradford.Billings@state.nm.us>
Sent: Wednesday, August 2, 2017 12:40:46 PM
Subject: RE: Annapurna-Release

Dear Mr. Kane:

Please address these concerns regarding 1RP-4737:

1. When were the photos taken? **The photographs were taken on 7/28.**
2. Provide a rationale for the pools of water. Was there a recent precipitation event? **There were several rain events prior to our arrival. The water was a result of those events.**
3. A scaled map is required with the release point and dimensions of the impacted area demarcated. **We will prepare a scaled maps with the release point depicted along with the impacted area.**
4. Due to the volume of release, additional soil sample locations are required for release characterization.
 - As the release point was at one of the separators, several (2-3) representative sample points are required in proximity. **The release point is located at the separator and is on the compacted caliche pad. The Sample Point S1-A was collected at the lowest point near the release point where liquids would**

have collected. Please confirm that additional samples are required.

- Establish sample locations as practicable in the spots where there are still apparent oil staining around the separator infrastructure, as shown in the photos in Appendix A- Part 7.
5. Permissible chloride levels must be obtained and maintained for a minimum of 5 ft. in depth. Laboratory analyses are required for a minimum of 2 depths for each sample location: the first depth obtained and 5 ft. further in depth. The provided data indicate that vertical delineation is not complete at S1A. For S2A, permissible chloride levels of ≤ 600 mg/kg must be demonstrated at 7 ft. bgs. **The chloride results for S2-A collected at 2 ft. bgs is 281 mg/Kg. Please confirm that an additional sample collect at 7 ft bgs is required.** and at 5 ft. bgs for S3A, 4A, and S6A. **The chloride results for S3A collected at 1 ft bgs. is 47.7 (mg/Kg) and for 2 ft bgs it is 53.1 mg/Kg. Also, the chloride results for S4A collected at 1 ft. bgs is 82.4 (mg/Kg) and 59.1 mg/Kg for the sample collected at 2 ft bgs. These results are well below the most restrictive standard of 250 mg/Kg. Please confirm that additional samples collected at 5 ft. bgs are required for these sample locations. An additional sample will be collected from SA6 at a depth of 5 ft bgs. as requested.** At any depth permissible chloride levels are exceeded, the 5 ft. additional recommences.
 6. Use Method 8015, extended for TPH analyses (GRO, DRO, MRO). **The revised analytical results including the MRO results are attached.**
 7. PID for field evaluation is applicable only to BTEX and not functional for TPH. Provide all field chloride tests if available. **The EC measurements are provided in Table 1.**

Please be advised that NMOCD does not permit soil washing currently. Please revise the proposed remedial activities. **We will revise the remediation action plan after receiving your response to the information provided above.**

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
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From: Alan Kane [<mailto:alanjkane@comcast.net>]
Sent: Tuesday, August 1, 2017 2:20 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Elrod, Kevin <kevinjelrod@comcast.net>
Subject: Re: Annapurna-Release

Thanks for your help on this.

From: "Olivia Yu, EMNRD" <Olivia.Yu@state.nm.us>
To: "Alan Kane" <alanjkane@comcast.net>
Cc: "Kevin Elrod" <kevinjelrod@comcast.net>
Sent: Tuesday, August 1, 2017 2:14:35 PM
Subject: RE: Annapurna-Release

Mr. Kane:

Thank you for the reminder. As I informed Ms. Stratton, the earliest review time is this week. Please be patient as I am the sole Environmental Specialist for NMOCD- District I.

Olivia

From: Alan Kane [<mailto:alanjkane@comcast.net>]
Sent: Tuesday, August 1, 2017 12:58 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Elrod, Kevin <kevinjelrod@comcast.net>
Subject: Annapurna-Release

Olivia, have you been able to evaluate the sampling information and proposed corrective action plan for the following facility?

Annapurna 20 #001H

The 1RP for this incident is

| | | | | | | | |
|-------------|-----------|---|---------------------|--------------------|--------------|------------|-----------|
| 4737 | 6/26/2017 | A | Rockcliff Operating | Annapurna 20 #001H | 30-041-20969 | 8S-34E-17P | 6/15/2017 |
|-------------|-----------|---|---------------------|--------------------|--------------|------------|-----------|

Thanks,

Alan Kane