uraniumone
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February 28, 2014

Mr. Andrew Persinko, Deputy Director
Decommissioning & Uranium Recovery Licensing Directorate
Division of Waste Management & Environmental Protection
Office of Federal & State Materials & Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Mail Stop T7-E18
Rockville, Maryland 20852-2738

Re:
License Amendment Request – Re-drying Honeymoon Dried Yellowcake
Uranium One USA, Inc.
Materials License No. SUA-1341
Docket No. 40-8502

Dear Mr. Persinko:

The purpose of this letter is to request that Uranium One USA Inc.'s ("Uranium One") Materials License No. SUA-1341 (the "Materials License") be modified to allow re-drying at Willow Creek's Irigaray Central Plant Processing facility, of approximately 570,000 pounds of yellowcake material from the Honeymoon Project in Australia owned by Uranium One Australia Pty Ltd., an affiliate of Uranium One.

The NRC had previously determined, in their letter of December 24, 2013 that the transfer, possession, or storage of Uranium One Australia's Honeymoon Project yellowcake ("Honeymoon Yellowcake") to Uranium One's Willow Creek Project ("Willow Creek") is authorized under Uranium One's Materials License. Also, Uranium One was recently advised that Honeymoon Yellowcake currently stored at the Cameco Blind River conversion facility can be transferred and stored at Willow Creek. In addition, the Willow Creek Irigaray plant will be receiving some Honeymoon Yellowcake which is currently stored at the Converdyn conversion facility.

The objective is, subsequent to approval from NRC, to re-dry Honeymoon yellowcake at Willow Creek to meet converter specifications. Therefore, the purpose of this amendment request is to request the NRC to approve the modification of two provisions of the Materials License:

1) Section 3.4.1.3 of the May 2008 License Renewal Application ("LRA") specifically allows Uranium One to process and perform toll drying of uranium-laden resins or slurry materials from other outside operations. Uranium One is requesting that the language in this section be modified to allow the re-drying of dry yellowcake material in addition to uranium-laden resins and slurry materials. The Honeymoon yellowcake contains a low percentage of organics that does not meet conversion facility specifications. Thus, the re-drying of this material through the Willow Creek

Uranium One USA, Inc.
A Member of the Uranium One Inc. Group of Companies
tel +1 307-234-8235 • **fax** +1 307-237-8235
907 N. Poplar Street, Suite 260
Casper, Wyoming 82601
www.uranium1.com

dryer/calciner (at Irigaray Processing plant) is necessary to reduce the organic content to acceptable levels for further processing at a conversion facility.

2) As the Honeymoon Yellowcake material has already gone through the drying process, it will require a much shorter residence time within the Irigaray dryer/calciner than that of the normal wet slurry feed. The primary function of the re-drying of the Honeymoon yellowcake will be to drive off the organic content. Thus, the requirement for a 4.5 hour dryer retention time stipulated in the September 21, 2012 Confirmatory Action Letter is not appropriate or necessary for this specific application. Uranium One requests that the requirement set forth in License Condition 9.3 (bullet item number seven), state that the 4.5 hour dryer retention time shall not apply to the re-drying of the Honeymoon Yellowcake.

Uranium One believes that this amendment request meets the criterion specified within 10 CFR 51.22 as a categorical exclusion not requiring environmental review. The proposed action is not anticipated to result in a significant change to the types or amounts of any effluents that may be released off site; no significant increase in individual or cumulative occupational radiation exposure from the proposed action is expected; no significant construction impact is expected; and no significant increase in the potential for or consequences from radiological accidents is expected.

This proposed amendment request was discussed with NRC staff on January 23, 2014 at NRC headquarters in Rockville. It was Uranium One's understanding that the amendment request could be evaluated on a priority basis as the amendment is from an operating facility. Uranium One believes NRC's evaluation of this request should be straightforward in that the proposed activities are consistent with the existing operating conditions specified in the Materials License. The request is only in respect of a re-drying operation to meet converter specifications for a limited amount of yellowcake material. The re-drying of the Honeymoon Yellowcake to meet converter specifications is of the highest importance to the Company, and any information or assistance required by the NRC during their review will be quickly provided by Uranium One to help expedite the review process.

Enclosed please find a completed NRC Form 313, a Technical and Impact Analysis of the proposed action and appropriate page replacements for the 2008 LRA (text changes underlined) in support of this amendment request. If you have any questions regarding this submittal, please contact me at (307) 234-8235 ext. 331 or by email at Jon.Winter@Uranium1.com.

Sincerely,

Jon Winter
Director, Health, Safety and Environment

Uranium One USA, Inc.
A Member of the Uranium One Inc. Group of Companies
tel +1 307-234-8235 • **fax** +1 307-237-8235
907 N. Poplar Street, Suite 260
Casper, Wyoming 82601
www.uranium1.com

Enclosures:

1. NRC Form 313
2. Technical and Impact Analysis
3. SUA-1341 May 30, 2008, LRA page replace directions
4. Revised May 30, 2008 LRA pages 3-33 and new pages 3-32a, and 3-32b.
5. Revised May 30, 2008 LRA Figures 3.10 and 3.11

cc: Ron Linton w/enclosures
Donna Wichers w/enclosures

Uranium One USA, Inc.
A Member of the Uranium One Inc. Group of Companies
tel +1 307-234-8235 • **fax** +1 307-237-8235
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NRC FORM 313 (03-2013)
10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 **EXPIRES: 05/31/2015**

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Information Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING,

SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- ☐ A. NEW LICENSE
- ☑ B. AMENDMENT TO LICENSE NUMBER — SUA-1341
- ☐ C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Uranium One USA, Inc.
907 N. Poplar Street, Suite 260
Casper, Wyoming
82601

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Willow Creek Facility
Irigaray Plant Facility
2751 Irigaray, Rd., Johnson County, WY
Christensen Ranch Satellite Facility
932 Black & Yellow Rd., Johnson County, WY

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Jon Winter

BUSINESS TELEPHONE NUMBER	BUSINESS CELLULAR TELEPHONE NUMBER
(307) 234-8235	(307) 315-2638

BUSINESS EMAIL ADDRESS
jon.winter@uranium1.com

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number; b. chemical and/or physical form; and c. maiximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (Fees required only for new applications, with few exceptions*) *(See 10 CFR 170 and Section 170.31)* FEE CATEGORY: Full Cost AMOUNT ENCLOSED $

13. CERTIFICATION. *(Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.*

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35 , 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.
WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A C RIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Donna L. Wichers, President	Donna L. Wichers	02-28-2014

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED $	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

IRIGARAY/CHRISTENSEN RANCH URANIUM PROJECT
SUA-1341 SOURCE MATERIALS LICENSE AMENDMENT REQUEST

NRC Form 313 Attachment
Items 5 Through 11

Applicant

Uranium One USA, Inc.
907 N. Poplar Street, Suite 260
Casper, WY
82601

5. **Radioactive Material**:

a) Element and Mass Number:

Uranium- Unat (U_{238}, U_{234}, and U_{235})

b) Chemical and/or Physical Form:

Chemical form is U3O8
Solution of 0 to 50 grams/liter
Dried Yellowcake- 50% to 80% U

c) Maximum Amount Which will be possessed at any one time:

Unlimited

6. PURPOSE FOR WHICH LICENSED MATERIAL WILL BE USED:

Fuel for electricity generation from nuclear power plants.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE:

Individual: Tim McCullough
Radiation Safety Officer
Uranium One USA, Inc.
Irigaray/Christensen Ranch Project

Training: Radiation Safety Officer for SUA-1341 from 2013 to present
Site Manager of Safety Health and Environment for SUA-1341 from 2011 through 2013
Thirteen (+) years of ISR uranium mining experience

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS:

This information is provided in detail in Section 5 of the approved May 30, 2008 SUA-1341 License Renewal Application and supplemental submissions.

9. FACLITIES AND EQUIPMENT:

This information is provided in detail in Section 3 of the approved May 30, 2008 SUA-1341 License Renewal Application and the attached License Amendment Request - Technical and Impact Analysis.

10. RADIATION SAFETY PROGRAM:

This information is provided in detail in Section 5 of the approved May 30, 2008 SUA-1341 License Renewal Application and supplemental submissions.

11. WASTE MANAGEMENT:

This information is provided in detail in Section 4 of the approved May 30, 2008 SUA-1341 License Renewal Application and supplemental submissions.

MATERIALS LICENSE SUA-1341 LICENSE AMENDMENT REQUEST TECHNICAL AND IMPACT ANALYSIS For Re-drying Honeymoon Dried Yellowcake at the Willow Creek Irigaray Processing Plant

1) Introduction and Purpose

The Willow Creek ISR facility owned by Uranium One USA, Inc. ("Uranium One") is proposing to re-dry approximately 570,000 pounds of dried yellowcake (the "Honeymoon Yellowcake") originally produced at the Honeymoon ISR facility in Australia owned by Uranium One's affiliate, Uranium One Australia Pty Ltd. The Honeymoon Yellowcake has been previously dried using a low temperature rotary vacuum dryer. Some organic material from Honeymoon's solvent extraction circuit is present in the Honeymoon Yellowcake in amounts that do not meet the specifications of conversion facilities. As a result, prior to sending it to the conversion facility, the Honeymoon Yellowcake must be re-dried at higher temperatures in order to burn off the residual organic.

Uranium One proposes to re-dry the Honeymoon Yellowcake using the dryer/calciner ("dryer") at Willow Creek's Irigaray plant. The Honeymoon Yellowcake would be processed on a campaign basis separate from any Willow Creek yellowcake slurry. In doing so, Uranium One will maintain traceability and accountability of the Honeymoon Yellowcake. After the re-drying operation as described in this submittal and its appendices, the material will be packaged and transported to the conversion facilities.

NRC determined in their letter of December 24, 2013 that the transfer, possession and storage of the Honeymoon Yellowcake at Willow Creek is permitted under Uranium One's Materials License SUA-1341 ("Materials License"). Uranium One expects to receive the first Honeymoon Yellowcake shipment from Australia on March 3, 2014. Also, Uranium One was recently advised that Honeymoon Yellowcake currently stored at the Cameco Blind River conversion facility can be transferred and stored at Willow Creek. In addition, the Willow Creek Irigaray plant will be receiving some Honeymoon Yellowcake which is currently stored at the Converdyn conversion facility.

The purpose of this submittal is to request that the NRC review and approve an amendment to the Materials License to permit the re-drying of the Honeymoon Yellowcake at the Willow Creek Irigaray processing plant as described in this submittal; specifically, Uranium One requests that the Materials License be amended to:

- Modify Section 3.4.1.3 of the approved License Renewal Application ("LRA") to allow re-drying dry yellowcake in addition to processing of uranium-laden resin and slurry materials from other ISR operations; and
- Modify Condition 9.3 to add language that states that the 4.5 hour retention time does not apply to the re-drying of the Honeymoon Yellowcake.

Uranium One is authorized under the Materials License to produce 2.5 million pounds of dried yellowcake on an annual basis. The combined quantities of re-dried Honeymoon Yellowcake (570,000 lbs) and Uranium One's forecasted annual production (600,000 lbs) from Willow Creek will total almost 1,200,000 lbs, well below the annual licensed production capacity.

The following sections of this submittal form the Technical and Impact Analysis for re-drying the Honeymoon Yellowcake at Willow Creek.

2) Re-Drying Description

The plan for re-drying the Honeymoon Yellowcake is relatively simple. The dried material will be added directly to the top hearth of the dryer at the same location as the Willow Creek slurry feed.

The dryer will be operated at an optimum temperature for burning off organics to a level within converter specifications. The temperature range to achieve this objective will be determined by an independent laboratory. It is expected that this temperature range will be significantly less than the temperature used for drying the Willow Creek Yellowcake slurry. Also, the residence time for the Honeymoon Yellowcake within the dryer will be shorter than the currently required 4.5 hours for the Willow Creek wet slurry.

The re-dried material will then be drummed according to established procedures to maintain tracebility and accountability of the Honeymoon Yellowcake. It is anticipated that the Honeymoon Yellowcake can be re-dried in two or three separate drying campaigns of approximately 1.5 to 2 months each.

The Honeymoon Yellowcake received from the various locations will be stored in designated areas within the Willow Creek Irigaray facility. The Honeymoon Yellowcake, contained in 55 gallon drums, will be moved by forklift from the storage areas to the location where the first phase of the re-drying process begins (area adjacent to the filter press). To safely add the drummed material to the dryer, Uranium One is proposing to utilize a drum tipping system to minimize the manual handling risk, combined with an enclosed tubular drag conveyor that is designed to prevent or minimize airborne dust. This system is a fully enclosed system to control and minimize potential employee exposures from yellowcake dust.

The system will load the dry yellowcake from the drum into an enclosed bin that feeds an enclosed tubular drag conveyor. The tubular drag conveyor then transfers (in an enclosed system) the yellowcake approximately 32' up the outside wall of the dryer/packaging enclosure then enters through an opening in the enclosure wall to the top of the Irigaray yellowcake dryer as depicted in Figure 1. The yellowcake is then fed into the top hearth of the dryer through the flange currently utilized to feed yellowcake slurry from the thickeners.

As mentioned earlier, Uranium One does not intend to run its Willow Creek yellowcake slurry and the Honeymoon Yellowcake through the dryer concurrently; the Honeymoon Yellowcake would be re-dried on a campaign basis separate from current Willow Creek slurry operations. While Honeymoon Yellowcake is being re-dried, the yellowcake slurry from the Willow Creek operations will be stored in the thickener tanks while the Honeymoon yellowcake is being re-dried. When the thickener tanks reach near capacity, the drying campaign of Honeymoon Yellowcake will be ceased. After all the Honeymoon Yellowcake has been treated and emptied from the dryer and drummed, then the Willow Creek slurry operations will resume. A diagram of the proposed drum tipping and enclosed tubular drag conveyance system is included as Figure 1. Because the system is designed to prevent airborne dust, Uranium One anticipates no additional emission control systems will be necessary for the proposed re-drying operations.

The drum tipping system will involve removal of the Honeymoon Yellowcake drum lid and attachment of a cone adaptor with a valve (Figure 1). The drums will then be inverted and locked into a receiving hopper which will form a dust-tight seal. The valve on the drum cone attachment is then opened and the yellowcake will flow into the hopper which feeds the enclosed tubular drag conveyance system for transport to the yellowcake dryer. The enclosed tubular drag conveyance system will feed the

Honeymoon Yellowcake through the dryer enclosure wall into the top hearth of the dryer through the existing flange assembly presently used to add yellowcake slurry into the dryer (Figure 1). Uranium One's Health and Safety, and Management team visited and observed a drum tipping and enclosed tubular drag conveyance system in use at the Stillwater Mining Company's platinum smelter in Columbus, Montana. Based on this visit, Uranium One is confident that this system will perform in a manner that will meet the operational and health and safety objectives.

Use of the drum tipping and enclosed tubular drag conveyance system has less potential for employee dust exposure issues, will also minimize employee contact with the material and is less labor intensive. Airborne uranium concentrations will be monitored to ensure engineering and management controls are effective in controlling employee exposures ALARA. The location of the drum tipping system on the ground floor adjacent to the yellowcakd filter press (as shown in on Figure 3.10), will allow for easy access to the current Irigaray emission control duct work should air sampling indicate that additional engineering controls are necessary to maintain occupational exposures ALARA.

Uranium One is currently having laboratory testing performed on the Honeymoon Yellowcake to determine the optimum dryer temperature and dryer retention time requirements needed to reduce residual organic levels to acceptable concentrations for further processing at the converters. Cameco's laboratory at the Blind River conversion facility is performing these analyses for Uranium One to insure that the re-dried Honeymoon Yellowcake will be within conversion specifications. Because the Honeymoon yellowcake will be fed to the dryer as a dry material (less than 5% free moisture) rather than a wet slurry (50% to 60% free moisture) the time required to burn off the residual organic present in the Honeymoon Yellowcake is expected to be much shorter than the current 4.5 hour dryer retention time specified in the September 21, 2012 Corrective Action Letter and License Condition 9.3 of the Materials License. We do not believe the 4.5 hour retention time requirement is applicable or appropriate for the already dried Honeymoon Yellowcake.

Emission control equipment utilized for the re-drying of the Honeymoon Yellowcake will be the same equipment that is currently utilized for the Willow Creek operations. Effluent control system operations will be consistent with those specified in Section 4.0 of the LRA and Condition 10.8 of the Materials License. Uranium One commits to conduct stack sampling during the first Honeymoon Yellowcake re-drying campaign to demonstrate that emission control systems are operating properly and are effectively maintaining stack effluent releases below those specified in Wyoming Air Quality Permit OP-254. Stack sampling during the Honeymoon Yellowcake re-drying would be in addition to the semi-annual stack sampling performed during the processing of yellowcake slurry as described in the approved LRA.

Uranium One has included an updated drawing of the Irigaray General Plant Arrangement (Figure 3.10) showing the location of the Honeymoon Yellowcake re-drying system. Additionally, Figure 3.11 (Irigaray Process Flow Diagram) has been updated and included to show the Honeymoon Yellowcake point of addition to the dryer.

3) Potential Health, Safety and Environmental Impacts

An analysis of the potential health, industrial safety and environmental impacts of re-drying the Honeymoon Yellowcake was conducted. The results of the analysis are summarized below:

- The current Materials License and approved LRA for the Willow Creek facility permits an annual production of 2,500,000 pounds of dried yellowcake or approximately 3,125 (55 gallon)

drums. Engineering and operational controls currently in place are expected to be sufficient to minimize the occurrence of an accident involving the handling of drums.

- The Honeymoon Yellowcake drums will be safely stored inside the secured Irigaray Plant.

- No significant change in the type of emissions or effluents release offsite as a result of the proposed action is expected.

- No significant changes to the in-plant air monitoring programs as a result of the proposed activity are expected. Uranium One will conduct air sampling to verify the effectiveness of the drum tipping system. If samples indicate elevated airborne concentrations, Uranium One will take appropriate actions to ensure airborne concentrations are being maintained ALARA.

- The proposed activity is not expected to result in a significant increase to an individual or cumulative occupational dose. No increase in occupational exposures is anticipated as proposed activities will follow commitments, representations and practices contained in the Materials License and the approved LRA. This activity will also be covered under Standard Operating Procedures and existing radiation protection programs such as Uranium One's Radiation Work Permit and Respiratory Protection Program.

- The proposed activity is not expected to result in a significant increase in the potential for, or consequences of, radiological accidents that were previously evaluated by NRC as part of the license renewal process.

4) Solid and Liquid Waste Impacts

- Uranium One anticipates that the 55 gallon drums used to ship the Honeymoon Yellowcake to the Willow Creek facility will be re-used and thus no additional solid waste would be generated from the proposed action.

- Uranium One does not anticipate any additional liquid waste would be generated as a result of the proposed activity.

5) Transportation Impacts

- There are no additional transportation impacts created by the proposed Honeymoon Yellowcake re-drying activities. The current Materials License for Willow Creek accounts for the shipment of 2.5 million pounds of dried yellowcake on an annual basis. The dried yellowcake from the proposed activity along with budgeted site yellowcake production would result in the production of half that amount, or approximately 1.2 million pounds of yellowcake, causing no additional transportation impacts to those previously addressed.

6) Regulatory

- Uranium One has reviewed the proposed action and believes it meets the criterion specified within 10 CFR 51.22 as a categorical exclusion not requiring environmental review. The proposed action is not expected to make a significant change in the types of effluents or a significant increase in the amounts of any effluents that may be released offsite; no significant increase in individual or cumulative occupational radiation exposure from the proposed action

is expected; no significant construction impact is expected; and no significant increase in the potential for or consequences from radiological accidents is expected.

- As part of Uranium One's review process to determine if the proposed action would require a license amendment or could be performed under the site SERP process, Uranium One reviewed the NRC guidance documents SECY-95-211 and Policy 2012-06 and determined they are not applicable to the characterization of the Honeymoon Yellowcake.

Summary

Uranium One has already received an approval to receive and store the Honeymoon Yellowcake at its Willow Creek Irigaray facility.

Uranium One is confident the re-drying of the Honeymoon Yellowcake can be completed in a manner that is consistent with existing controls, procedures, regulations and policies applicable to Willow Creek and the terms of its Materials License.

Therefore, Uranium One requests that the NRC approve the License Amendment to allow the re-drying of the Honeymoon Yellowcake through the Willow Creek Irigaray dryer and to specify that Sections 3.4.1.3 and 9.3 are amended as set forth in Paragraph 1) above.

SUA-1341 May 30, 2008 License Renewal Application
February , 2014 Amendment Request
Page Replacement Directions

Page(s) Removed	Page(s) Inserted	Description of Change
3-30	3-30	New Figure 3.10-Irigaray General Plant Arrangement
	3-32a	Added text to Toll-drying of Yellowcake
	3-32b	Text carry over for Toll-drying of Yellowcake
3-33	3-33	New page to match text to document
3-35	3-35	New Figure 3.11 Irigaray Process Flow Diagram

Christensen Ranch. The dryer is capable of operating at a rate of 300 pounds per hour, or approximately 2.6 million pounds of throughput per year. The dryer is also permitted with the WDEQ for this rate through Operating Permit No. OP-254. It is estimated that during peak periods of production, the Christensen Ranch may produce up to 1 million pounds per year of uranium product which will be dried. COGEMA may wish to dry up to an additional 1.5 million pounds per year of yellowcake product from other uranium licensees. MILDOS modeling has been performed at the 2.5 million pound throughput and no significant increases in exposures to the general public have been seen as a result of this level of drying.

In the past the Irigaray plant received yellowcake slurry from our Texas operations for drying. Shipments of slurry were received in exclusive-use slurry transport trailers. Upon arrival, the slurry trailer entered the old portion of the plant through an overhead door directly adjacent to the northern-most yellowcake storage tank (see Figure 3.9, General Arrangement Diagram). The slurry was then pumped to one of the two yellowcake storage tanks (previous calcium clarifiers), using flexible hoses and a diaphragm pump. Excess decant and wash water from the unloading process was routed either to the on-site evaporation ponds as waste, or to the yellowcake processing area for filtration. Future receipt of outside yellowcake slurry likely would require the acquisition of additional storage tanks due to the loss of capacity from recent plant decommissioning activities.

Uranium One is re-processing approximately 1032 drums or approximately 550,000 pounds of dried YC for Uranium One's Honeymoon ISR Australian operations. Re-processing of these materials is necessary to reduce the organic content to a level which will be acceptable to the converter facilities for further processing. The method used for re-processing this material is as follows:

Dry Transfer: Honeymoon yellowcake would be transferred dry by a dust free drum tipping system and associated enclosed tubular drag conveyor directly into the Willow Creek yellowcake dryer for re-processing to burn off organic contaminates currently contained in the material Since dry materials would be introduced to the dryer the current dryer retention time of 4.5 associated with a wet slurry feed would not be necessary for the dry Honeymoon yellowcake. Dryer retention time for this product would be the time required to burn off the organic contaminate to acceptable levels for further re-processing at the converter facilities. Uranium One does not intend to run yellowcake slurry and the Honeymoon dry material through the dryer concurrently but plan to run the Honeymoon material on a batch or campaign basis separate from Irigaray yellowcake slurry operations.

Uranium One will use existing emission control systems currently in place (if necessary) at the facility to control dusting from any of the above process to maintain radiological exposure levels ALARA and consistent with commitments contained in Section 5 of this

License Renewal Application, SUA-1341 and 10 CFR 20.

Uranium One will conduct analysis of the Honeymoon material for compatibility both chemically and mechanical with the Willow Creek uranium recovery process prior to re-processing any of this material for recovery of uranium content

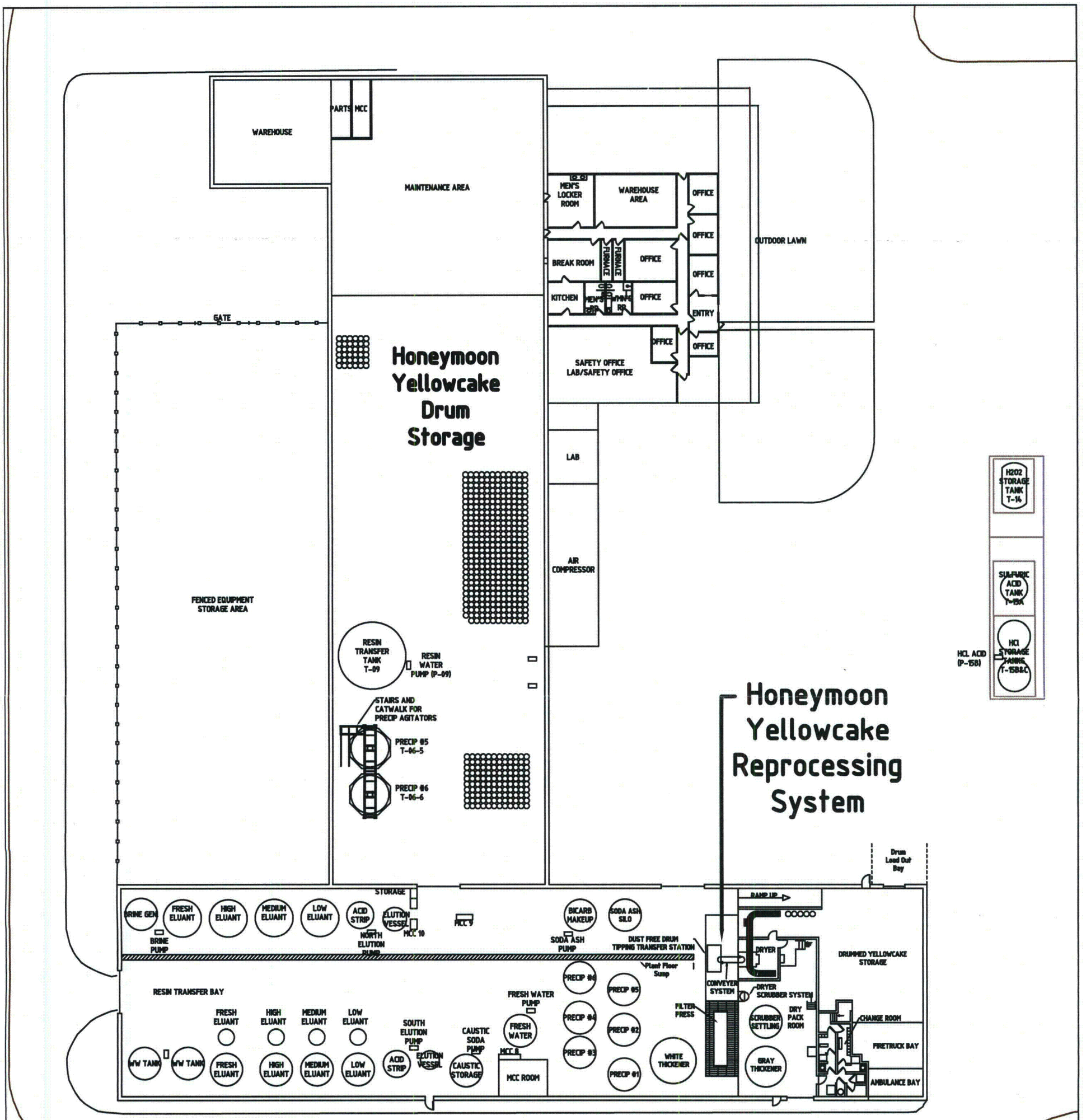
Any additional equipment needed to complete the above proposed re-processing actions will be shown in an updated Irigaray Process Flow Diagram (Figure 3.11) and Irigaray General Plant Arrangement (Figure 3.10).

3.4.1.5 Vanadium Separation

Recovery solution and yellowcake analysis from the Christensen Ranch operations has indicated that vanadium will co-leach with uranium during the mining process of portions of the Christensen Ranch ore body. Vanadium is also extracted onto the IX resin during the recovery solution processing. Vanadium is an undesirable constituent in the yellowcake product, therefore, it may become necessary to remove the vanadium prior to drying the Christensen Ranch yellowcake. This will only become necessary if the vanadium content reaches a level where the uranium refineries will penalize the product due to excessive levels of vanadium.

If vanadium removal from the Christensen Ranch product is necessary, a specialized circuit will be installed at the Irigaray central plant. Equipment required for the vanadium separation will consist of two precipitation tanks, two smaller tanks for chemical additions and solution overflow and a vanadium filter press. The vanadium separation equipment will be located in the old plant area next to one of the clarifier units used for yellowcake storage.

The vanadium removal process is very similar to that used for uranium processing. After elution of the Christensen resin, the high pregnant solution will be discharged from the elution unit to a high pregnant surge tank. The solutions would then be



25' 0 50'

VERIFY SCALE

SCALE : 1"=50'

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Irigaray Processing Facility
General Plant Arrangement

Date:10/25/10	By:CM	Checked:	Approved:

Rev. No.	Description	Date	By
0	Initial Draft	10/25/10	CM
1	Added Addt'l Precip Tanks	01/24/12	CM
2	Drum Tipping & Transfer Station	2/6/2014	TM

Project Name:	Figure #	REV
WILLOW CREEK	3.10	2

Honeymoon Yellowcake Reprocessing System

VENT TO ATMOSPHERE
H2SO4 ACID TANK (T-15B)
H2SO4 ACID (93%) FROM SUPPLIER
H2SO4 PUMP (P-15B)
VENT TO ATMOSPHERE
HYDROGEN PEROXIDE TANK (T-14)
H202 (50%) FROM SUPPLIER
H202 PUMP (P-14)
VENT TO ATMOSPHERE
HCl ACID TANKS (T-15A)
HCl ACID (35%) FROM SUPPLIER
HCl PUMP (P-15A)
VENT TO ATMOSPHERE
CAUSTIC SODA TANK (T-16)
50% CAUSTIC SODA FROM SUPPLIER
CAUSTIC SODA PUMP (P-16)
VENT TO BAG HOUSE
SODA ASH SILO (S-12)
BICARB TANK (T-12)
SODA ASH PUMP (P-12)
VENT TO BAG FILTER
BRINE GEN. (T-13)
NaCl FROM SUPPLIER
BRINE PUMP (P-13)
RESIN to TRAILER
RESIN TRUCK (TR-01&02)
LOADED RESIN
RESIN SCREEN
VENT TO ATMOSPHERE
ACID STRIP TANK (T-05-S) (T-05-N)
VENT TO ATMOSPHERE
HIGH ELUATE TANKS (T-04A-S) (T-04B-S) (T-04A-N)
MEDIUM ELUATE TANKS (T-03A-S) (T-03B-S) (T-03A-N)
LOW ELUATE TANKS (T-02A-S) (T-02B-S) (T-02A-N)
FRESH ELUATE TANKS (T-01A-S) (T-01B-S) (T-01A-N)
ELUATE PUMP (P-01-S) (P-01-N)
RESIN to ELUTION
ELUANT VOLUME
ELUTION VESSEL (V-01-S) (V-01-N)
PRECIP. FEED & ACID STRIP
BARREN RESIN
RESIN SCREEN
RESIN TRANSFER WATER
RESIN WATER PUMP (P-09)
RESIN TRANSFER WATER TANK (T-09)
VENT TO ATMOSPHERE (THROUGH FAN)
PRECIP TANK (T-06-1)
PRECIP TANK (T-06-2)
PRECIP TANK (T-06-3)
PRECIP TANK (T-06-4)
PRECIP TANK (T-06-5)
PRECIP TANK (T-06-6)
FILTER PRESS FEED PUMPS (P-06A&B)
FILTER PRESS (F-07)
SHAFTLESS CONVEYOR
HOPPER
THICKENER FEED PUMP (P-07)
GRAY WATER SUMP PUMP (P-90)
GRAY WATER SUMP
PLANT AREA SUMP PUMP
PLANT AREA SUMP
VENT TO ATMOSPHERE
WASTE WATER TANK (T-10-1)
WASTE WATER TANK (T-10-2)
WASTE WATER PUMP (P-10)
EVAP. PONDS
WASH WATER
JACUZZI PUMP (P-17)
JACUZZI TANK (T-17)
PROCESS WATER PUMP (P-11)
PROCESS WATER TANK (T-11)
THICKENER MECHANISM
THICKENER MECHANISM
YELLOWCAKE THICKENER, GRAY (T-08A)
YELLOWCAKE THICKENER, WHITE (T-08B)
DRYER FEED PUMP (P-08A)
DRYER FEED PUMP (P-08B)
CONVEYER SYSTEM
DUST FREE DRUM TIPPING TRANSFER STATION
TO ATMOSPHERE
SCRUBBER
YELLOWCAKE DRYER MULTIHEARTH FURNACE (D-09)
1
2
3
DRUM FILLING STATION YELLOWCAKE PRODUCT DRUMS
SCRUBBER SETTLING TANK (T-18)
SCRUBBER FEED PUMP (P-18A&B)
SCRUBBER PRESSURE TANK (T-19)
CISTERN (T-101)
CISTERN PUMPS (P-101A&B)
WATER WELL PUMPS (P-100A&B)
OFFICES & REST ROOMS
FIRE HOSES

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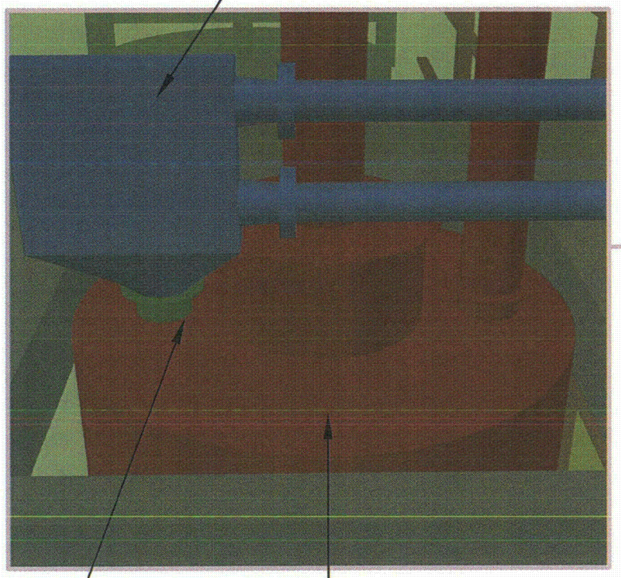
Irigaray Processing Facility
Process Flow Diagram

Date:02/20/10	By: CM	Checked:	Approved:

Rev. No.	Description	Date	By
1	Scrubber Tank/Pump Adj	10/07/10	CM
2	Plant Area Sump Added	10/14/2010	CM
3	Updated Elution Circuit for N&S	11/17/2010	CM
4	Drum Tipping & Conveyer Added	2/6/2014	TM

Project Name: WILLOW CREEK
Figure # 3.11
REV 4

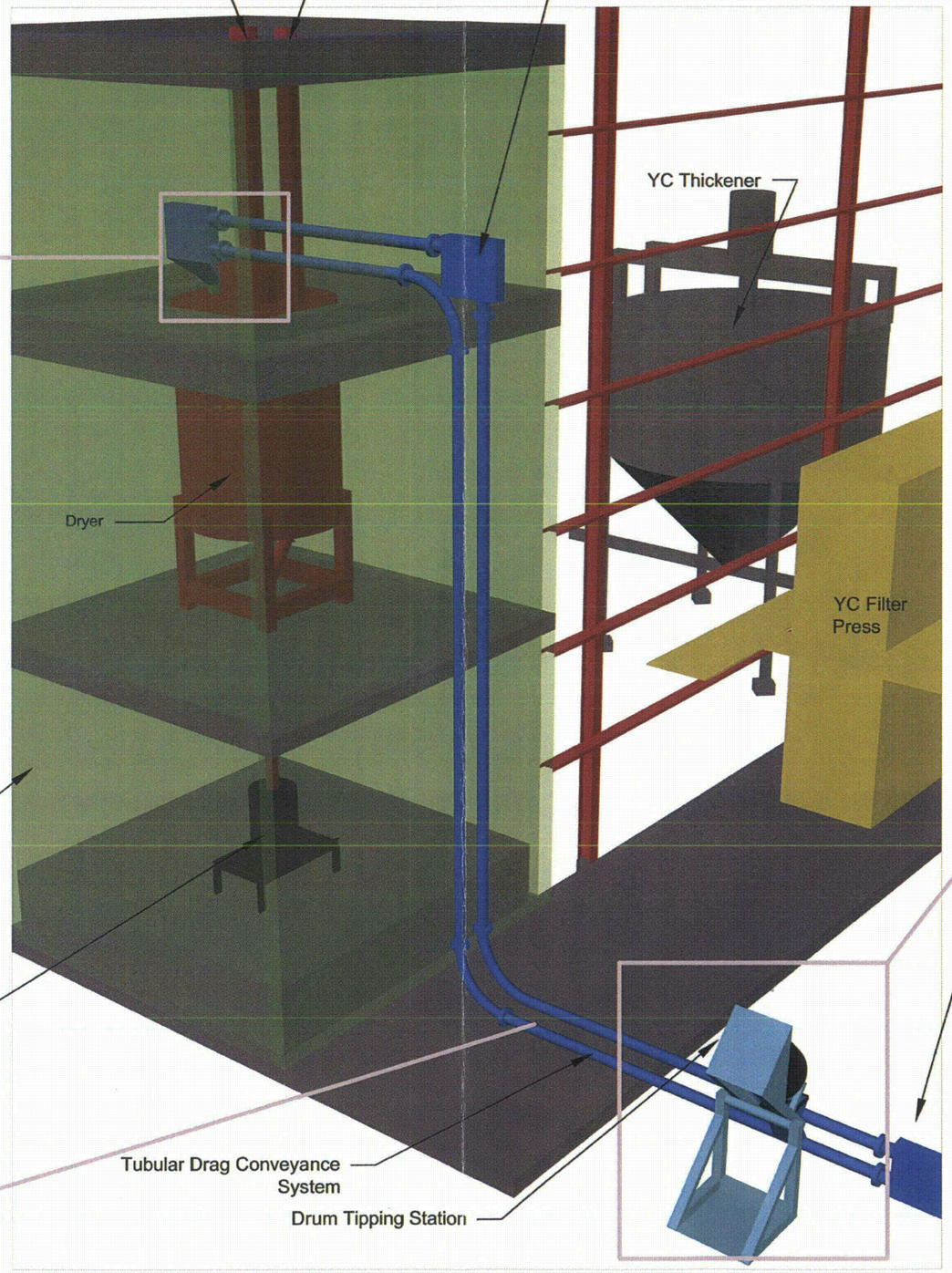
PATH: C:\Users\cm\611\Debtown\IR Process Flow Diagram.dgn PLOTTED: 2/26/2014 3:21 PM



Idler
Head Pulley

Top hearth
of dryer

Location of dryer feed into top of dryer
(same as existing slurry feed point)



Cooling
Center Shaft

Dryer Vent
Gas to Scrubber

Drive Gear Motor

Dryer

YC Thickener

YC Filter
Press

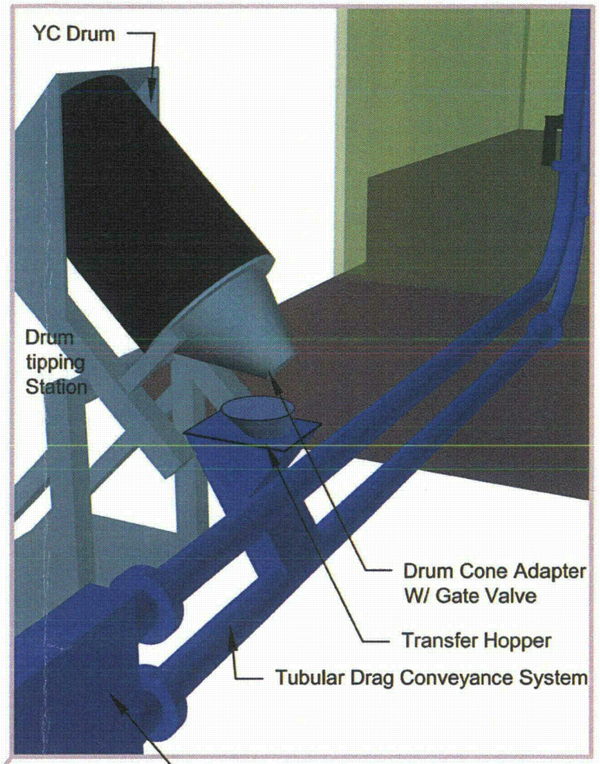
YC Dryer
Packaging Enclosure

YC Drum Packaging

Tubular Drag Conveyance
System

Drum Tipping Station

Idler
Tail Pulley



YC Drum

Drum
tipping
Station

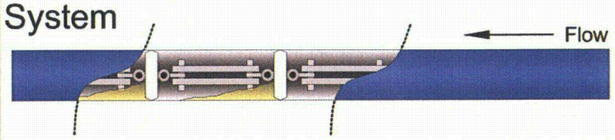
Drum Cone Adapter
W/ Gate Valve

Transfer Hopper

Tubular Drag Conveyance System

Idler
Tail Pulley

Tubular Drag
Conveyance
System



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Honeymoon Yellowcake
Reprocessing System

Date: 2/24/2014	By:	Checked:	Approved:

Rev. No.	Description	Date	By
0			
1			
2			
3			

Project Name:	Figure #	REV
WILLOW CREEK	1	0