

# **Cirras & Drawing conversion project**

- 1. Who we are**
- 2. What we do**
- 3. What we can do**

# 1. Who we are

Established in Singapore in 1999, Primalux Technology was founded on a vision of providing engineering industries with integrated, innovative and cost-effective computer solutions. The strength of the company comes from the global exposure and rich experiences of its founders in the process engineering industries, system design and implementation.

At the moment the number of employees involved in the work on the Sakhalin 2 project is about 40 people (including draftsmen, engineers, quality control specialists, etc.)

## 2. What we do

Working with Sakhalin Energy, the company provides a software package CIRRAS. CIRRAS is an acronym for Corrosion Integrity Risk Reliability Assurance System, in the integrity management industry it belongs to the group of Corrosion Integrity Management Systems (CIMS).

Also in CIRRAS project there is a subproject – Drawing Conversion Project (DCP). The goal of DCP is the conversion of more than 70,000 drawings of Sakhalin Energy into the format of DWG.

# 2.1 - Task & Responsibilities

## Responsibilities:

- Convert the drawings error-free, with speed and accuracy.
- Check correct CAD Attribute names (Smart Drawing).
- Perform self-check of the drawings (Pre-checks, L0 checks & Cross Checks).

## Tasks:

- Convert drawing from Source file (PDF/DGN/TIFF/DWG) to **DWG 2010** File format.
  - Download “Source file” from “Drawing Task” in EDMS was assigned by your Batch Owner (BO).
  - Before conversion - Perform Pre-check guidelines if any doubts ask your BO.
  - During conversion - The Technical Query (TQ) should be verified with BO to minimize error.
  - After conversion - Perform Self check (L0 checklist), the converted drawing must be **error-free**.
  - After L0 checks has passed, upload the converted file into the server.
  - If unnecessary and silly errors are found more than once, then **Corrective Action Report (CAR)** will be raised.

# 2.2- SEIC – Drawing Type

For this conversion project, we will be covering a total of 14 different drawings type for each Asset & Locations. All the drawings listed below have to be converted. However Drawing types 5 to 14 will also need to be a Smart Drawing.

1. Certified Equipment Drawings.
2. Equipment Location Plan.
3. Facility Block Diagram.
4. GA Civil & Structural.
5. GA Overall Plan Drawings.
6. GA Pipeline Schematic.
7. GA Piping Drawings.
8. Isometric Drawings.
9. Pipeline Detail Drawings.
10. Plot Plans Drawings.
11. Process Engineering Flow Scheme (PEFS).
12. Process Flow Scheme (PFS).
13. Vessel Detail Drawings.
14. Piping & Instrumentation Diagram (P&ID).

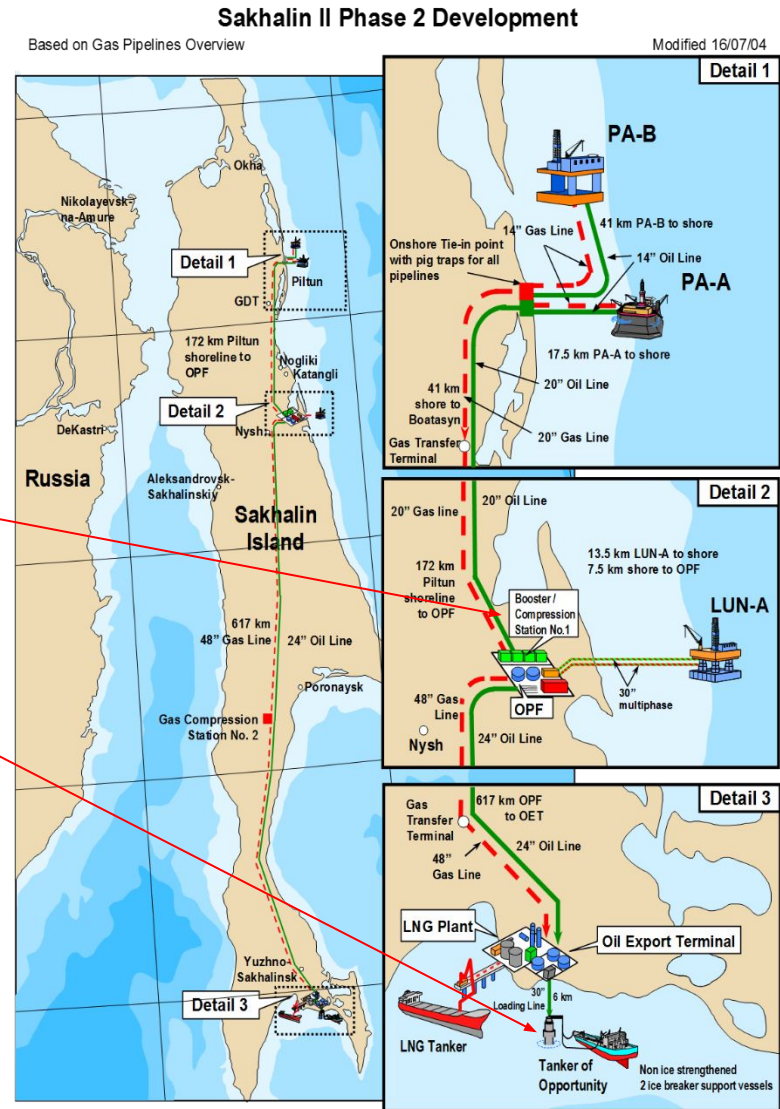
**General Drawings :- 1~4**

**Smart Drawings :- 5~14**

# 2.3 - SEIC - Assets & Locations

## List of Asset locations for SEIC project

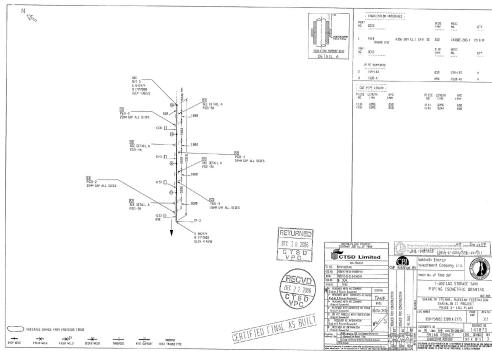
1. 2000 (PA-A) - PA Field Platform A
2. 3000 (PA-B) - PA Field Platform B
3. 4000 (LUN-A) - Lunskoye Field Platform A
4. 5000 Oil and Gas Pipelines
5. 5200 Compressor & Booster Station 2
6. 5500 (OET) - Oil Export Terminal
7. 5510 (TLU) - Tanker Loading Unit
8. 6000 (OPF) - Onshore Production Facility
9. 7000 (LNG) - Liquefied Natural Gas Plant



# 2.4 - SEIC – Drawing Classification

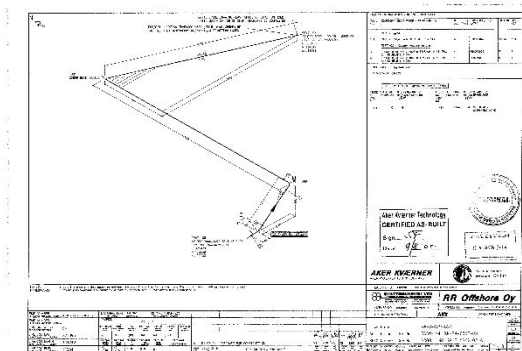
## A) Isometric Drawing

### (i) Simple



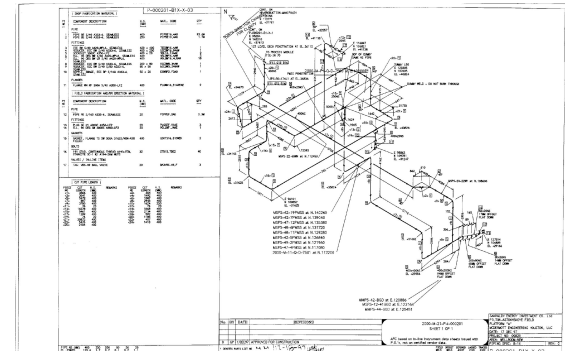
(Drawing with 1 to 4 pipelines and minimum information present on the drawing).

### (ii) Medium



(Drawing with 5 to 8 pipelines and minimum information present on the drawing).

### (iii) Complex

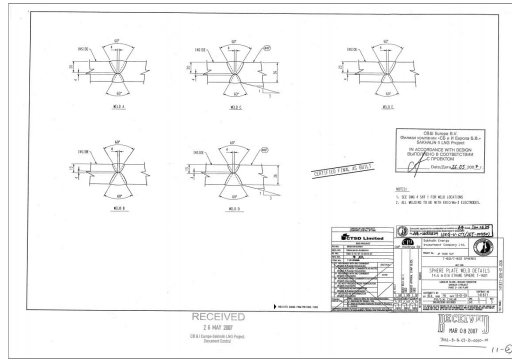


(Drawing with more than 8 pipelines and more information present on the drawing).

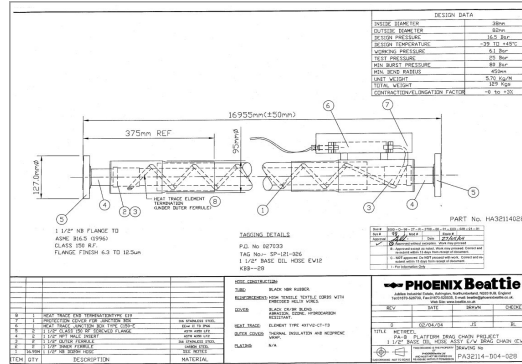
# 2.5 - SEIC – Drawing Classification

## B) Vessel Drawing (GA Details Drawing)

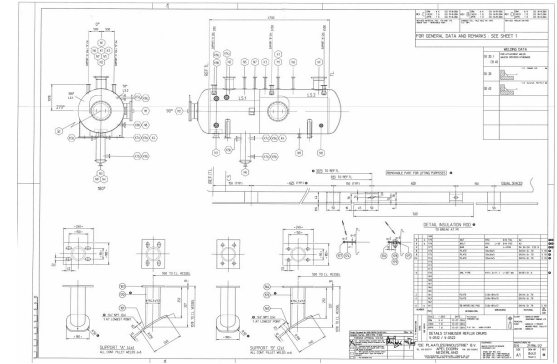
(i) Simple



(ii) Medium

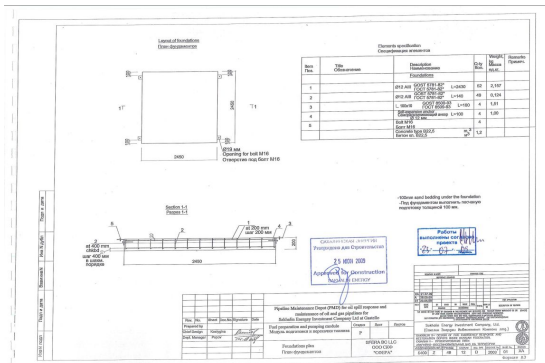


(iii) Complex

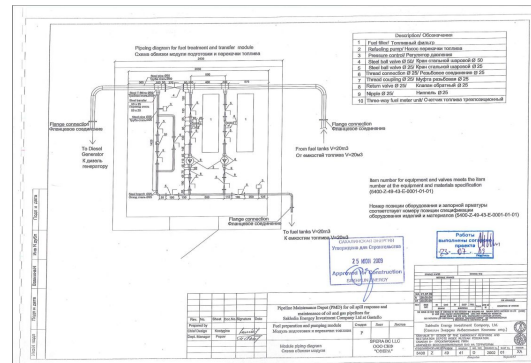


## C) Plot Plan Drawing

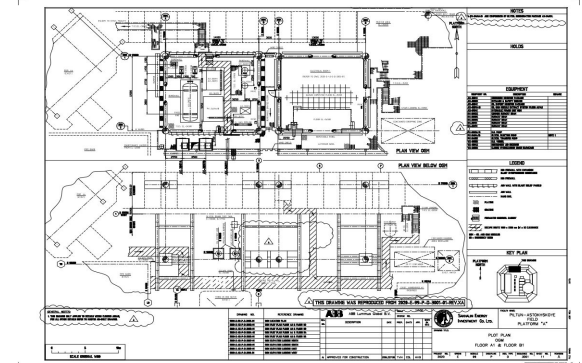
(i) Simple



(ii) Medium



(iii) Complex





# 2.6 - Smart Drawing

## What is SMART Drawing?

- A SMART drawing is defined in CAD drawing, which will add some attributes for equipment such as tanks, vessels, columns, heat exchangers, valves and corrosion loops for inspection, by using Blocking and Grouping method.

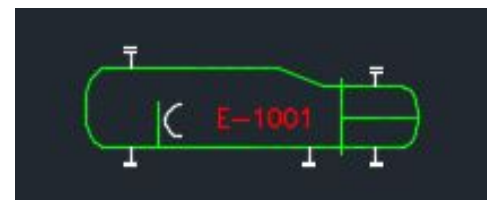
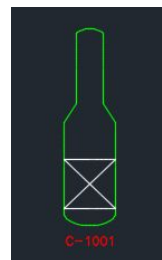
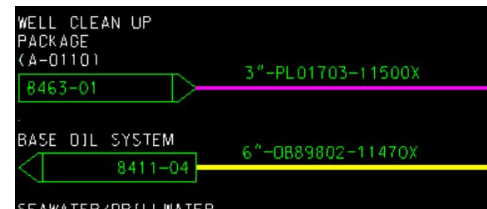
### Blocking

- Relief valves
- Pressure safety valves

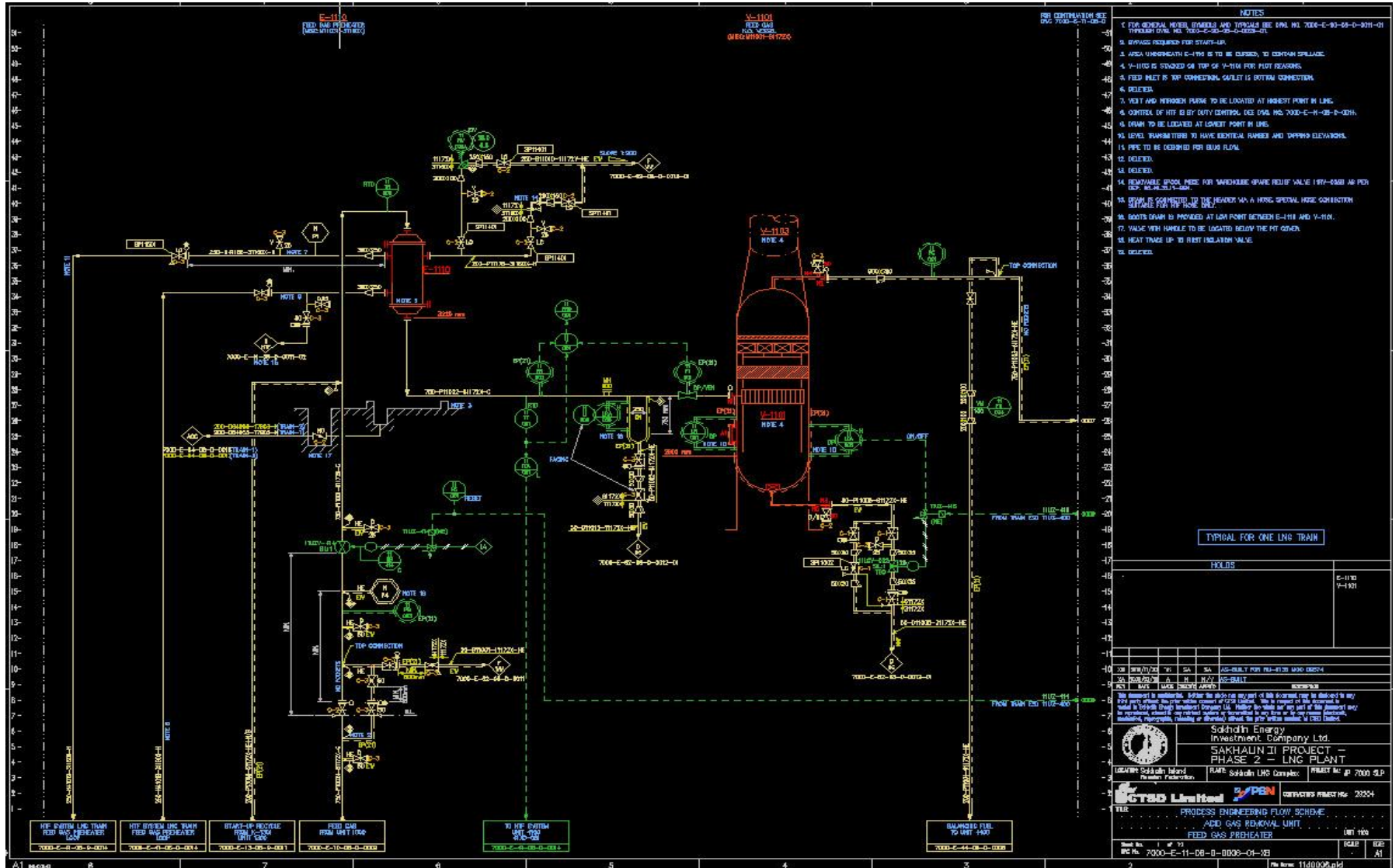


### Grouping

- Equipment (Tanks, Vessels, Columns, Heat Exchangers, Filters & major equipment with underline of Tag number X-XXX except Pump, Motor and Valve)
- Pipeline Identity Loops (PIL)
- Corrosion Loops (CL)



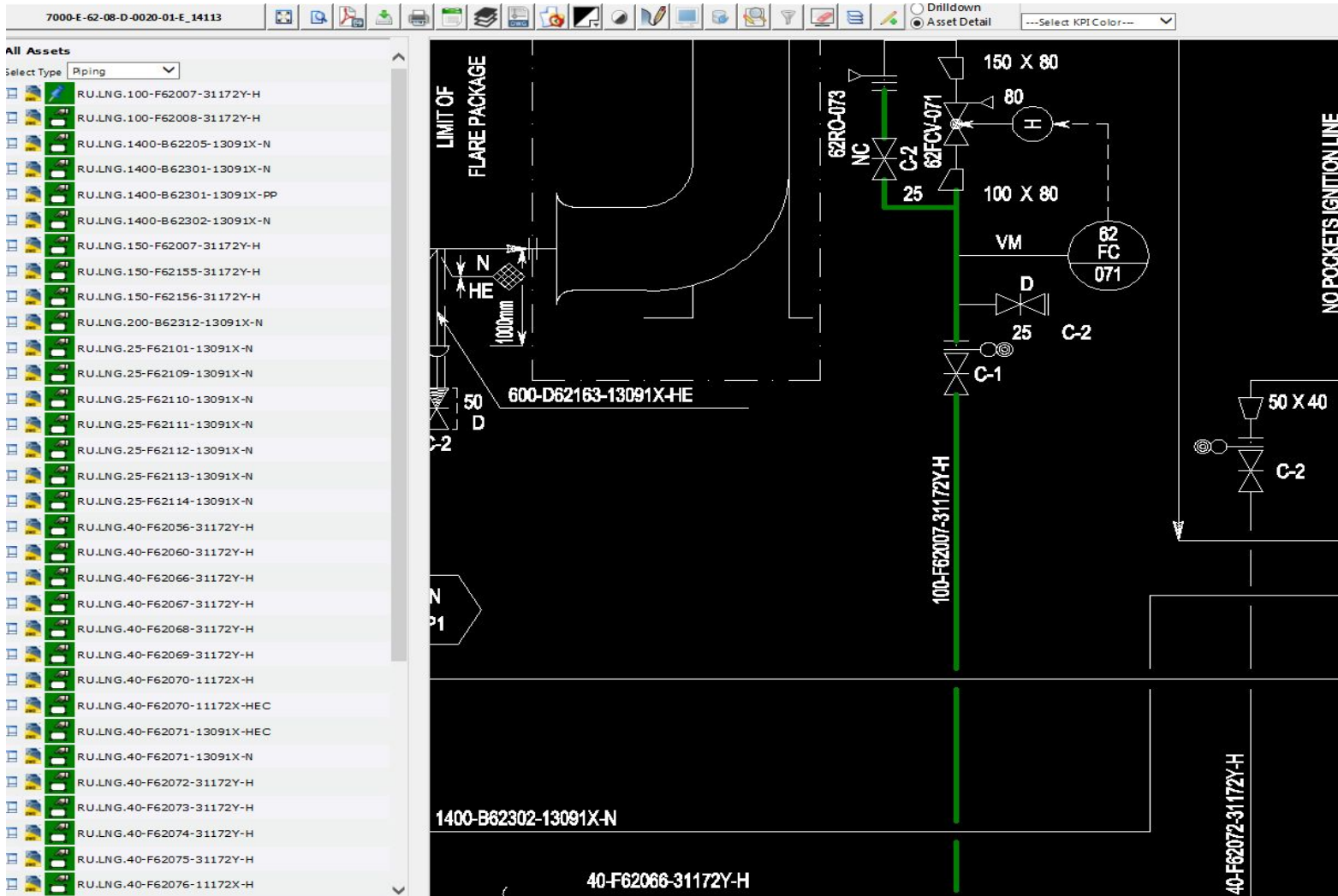
# 2.7 - Converted drawing – PDF ~ DWG





# 2.8 - Working spaces of CIRRAS

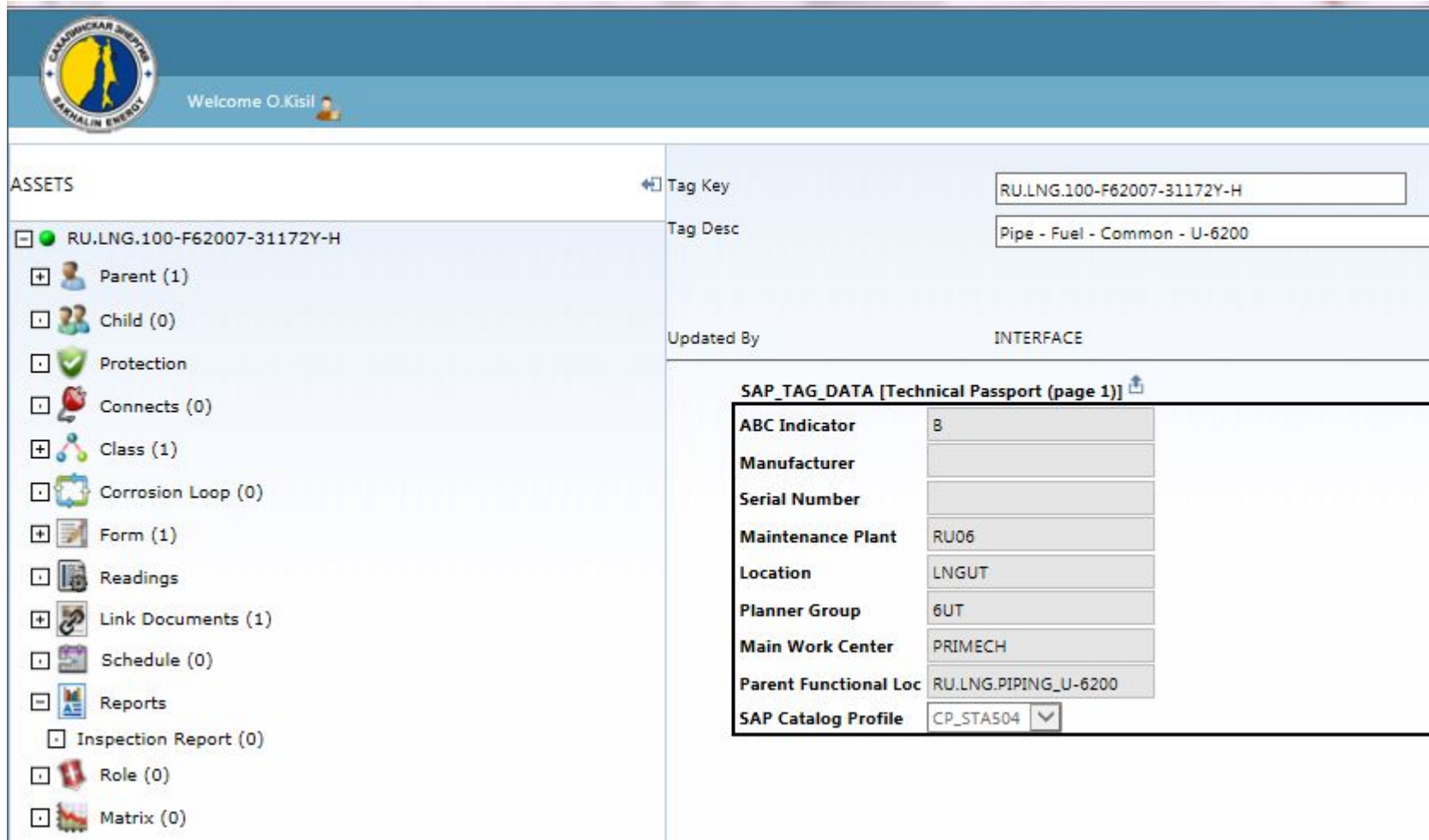
Selecting an interesting pipeline line, you can get all the necessary information about it



The screenshot displays a software interface for managing assets. On the left, a list titled "All Assets" shows various pipeline segments with their IDs and types. The "Select Type" dropdown is set to "Piping". The main area on the right shows a detailed technical drawing of a pipeline system. The drawing includes a "LIMIT OF FLARE PACKAGE" on the left, a "NO POCKETS IGNITION LINE" on the right, and several pipeline segments with their IDs: 600-D62163-13091X-HE, 100-F62007-31172Y-H, 1400-B62302-13091X-N, and 40-F62072-31172Y-H. The drawing also shows various valves (C-1, C-2), a pressure relief valve (62RC-073), a flow control valve (62FCV-071), and a pressure vessel (62 FC 071). Pipe sizes are indicated as 150 X 80, 80, 100 X 80, 50 X 40, and 25. Other labels include "VM", "D", "N", "HE", "NC", "D", "HE", "100mm", "50", "50", "N", "D", "C-2", "C-1", "C-2", "50 X 40", "C-2", "1400-B62302-13091X-N", "40-F62066-31172Y-H", and "40-F62072-31172Y-H".

# 2.8 - Working spaces of CIRRAS

## Information on the selected line of the 100-F62007-31172Y-H



The screenshot displays the CIRRAS system interface. At the top left is the logo for GARAHKIKAR SHIPPER SARALIN ENERGY. The user is logged in as O.Kisil. The main area is divided into two sections: a left sidebar for navigation and a main content area for details.

**ASSETS**

- RU.LNG.100-F62007-31172Y-H
  - Parent (1)
  - Child (0)
  - Protection
  - Connects (0)
  - Class (1)
  - Corrosion Loop (0)
  - Form (1)
  - Readings
  - Link Documents (1)
  - Schedule (0)
  - Reports
    - Inspection Report (0)
  - Role (0)
  - Matrix (0)

**Tag Key:** RU.LNG.100-F62007-31172Y-H

**Tag Desc:** Pipe - Fuel - Common - U-6200

**Updated By:** INTERFACE

**SAP\_TAG\_DATA [Technical Passport (page 1)]**

ABC Indicator	B
Manufacturer	
Serial Number	
Maintenance Plant	RU06
Location	LNGUT
Planner Group	6UT
Main Work Center	PRIMECH
Parent Functional Loc	RU.LNG.PIPING_U-6200
SAP Catalog Profile	CP_STA504

# 2.7 – Quality control

All produced drawings undergo a multistage quality control system.

- Precheck
- L0 check
- L2 check
- L3 check

For each level of verification, its own procedure is developed - checklist. Each level of verification is performed by different specialists. This approach allows us to achieve a high level of quality products

L0 QA/QC Form		L2/AL2 QA/QC Form	
<b>1 Document Information Check:</b>		<b>1 Document Information Check:</b>	
1.1	Document filename & revision <i>Check against EDMS document number &amp; revision?</i>	1.1	Document filename & revision
1.2	Document number in Title Block <i>Did you key-in the correct document number?</i>	1.2	Document number in Title Block
1.3	Document revision history <i>Did you follow the same revision history?</i>	1.3	Document revision history
1.4	Document sheet number <i>Exa</i>	1.4	Document sheet number
<b>2 Drawing Attributes Check:</b>		<b>Precheck Form</b>	
2.1	Title Block used from the template as same as source file <i>Exa</i>		Included on Dwgs ( <input checked="" type="checkbox"/> )
2.2	Symbol used from symbol library as same as source file <i>Exa</i>		
2.3	Words & sentences are key-in correctly <i>Did</i>	<b>1 Document Information Check:</b>	
2.4	Line weight & pipeline global width <i>Did</i>	1.1	Document number as per registered in EDMS.
2.5	Line type & line scale <i>Did</i>	1.2	Document revision number as per registered in EDMS.
2.6	Stamp used from library as same as source file <i>Exa</i>	1.3	Document revision date as per registered in EDMS.
2.7	Setting display arc and circle <i>Did</i>	1.4	Document classification correctly classified in EDMS.
2.8	External References <i>Did</i>	1.5	Document type correctly classified in EDMS.
2.9	Font style <i>Exa</i>	1.6	Document language correctly classified in EDMS.
2.10	Color & Layer <i>Exa</i>		
<b>3 Drawing compatibility check list</b>			
3.1	Autodesk Trueviewer 2015 Compatibility <i>Che</i>	<b>2 Drawing Attributes Check:</b>	
<b>4 Smart Drawing Attributes Check:</b>		2.1	General note, legend, symbol & bill of material are clear readable.
4.1	Block RV, PSV attribute and tag number <i>Blk</i>	2.2	Font/text/sentence are clear readable without overlap.
4.2	Major Equipment are Groups <i>Sele</i>	2.3	Specification, pressure rating, insulation type, thickness and gasket rating are clear
4.3	Pipeline Identity Loop (PIL) Grouping <i>Sele</i>	2.4	Equipment/instrument's tag number are clear readable.
4.4	Corrosion Loop (CL) Grouping as per CL mark-up drawing <i>Sele</i>	2.5	Centre line elevation for horizontal vessel, pump, nozzle are clear readable.
4.5	Attribute tag number entered correctly into an excel spreadsheet <i>Blk</i>	2.6	Pipeline number, slope for launcher/receiver, vent and drain are clear readable.

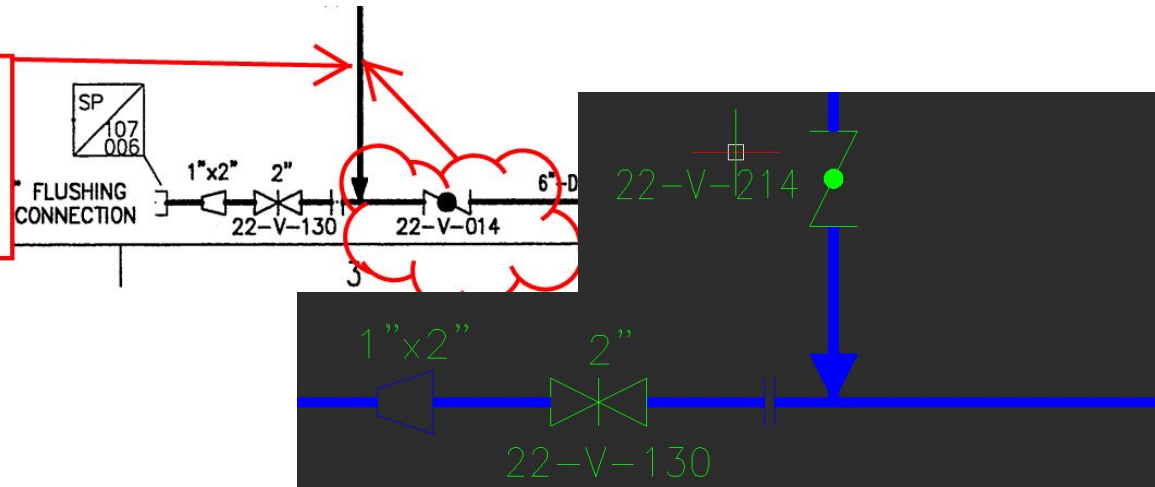
# 3. What we can do

Six specialists work in the office of the company in Yuzhno-Sakhalinsk. Our professional competence allows to work with drawings from different disciplines, such as:

GA Civil & Structural, GA Pipeline Schematic, GA Piping Drawings, Isometric Drawings, Pipeline Detail Drawings, Plot Plans Drawings, Process Engineering Flow Scheme (PEFS), Process Flow Scheme (PFS), Vessel Detail Drawings, Piping & Instrumentation Diagram (P&ID), and many others drawings.

We can convert, update, modify drawings. Create new drawings based on data and reports.

The position of valve 22-V-214 should be transferred to where the arrow is pointed



# 3. What we can do

Our team carried out the DWT project. Several templates of drawings were created for subsequent use by Sakhalin Energy contractors.

The results of the work on this project will lead to a uniform standard for drawing up drawings from various contractors of SEIC.

Among them are templates for: Plot Plans; Isometric drawings; PEFS/P&ID.

These templates contain a predefined set of layers and attributes coordinated with the customer

Layer Name	Color	Line Style	Line Weight	Plot Style	Lineweight
ATT_HID	11	Continuous	0.25	Plot	0.25 mm
ATT_VIS	yellow	Continuous	0.25	Plot	0.25 mm
B_BORDER	mag...	Continuous	0.15	Plot	0.15 mm
B_CUTLINE	white	PHANTOM	0.15	Plot	0.15 mm
B_LOGO	white	Continuous	0.15	Plot	0.15 mm
B_REV	white	Continuous	0.15	Plot	0.15 mm
B_TITLE	white	Continuous	0.15	Plot	0.15 mm
B_TITLE_TXT_AT	white	Continuous	0.15	Plot	0.15 mm
B_TITLE_TXT_ENG	white	Continuous	0.15	Plot	0.15 mm
B_TITLE_TXT_RU	white	Continuous	0.15	Plot	0.15 mm
BATT_LIM	220	PHANTOM	0.25	Plot	0.25 mm
Defpoints	white	Continuous	По умолчанию	Plot	По умолчанию
ELEC	cyan	HIDDEN2	0.25	Plot	0.25 mm
EQUIP	green	Continuous	0.35	Plot	0.35 mm
EQUIP_INT	74	HIDDEN2	0.25	Plot	0.25 mm
G_BKGRD	144	Continuous	0.05	Plot	0.05 mm
G_BKGRDXT	145	Continuous	0.13	Plot	0.13 mm
G_DIMN	132	Continuous	0.15	Plot	0.15 mm
G_EXIST	145	Continuous	0.05	Plot	0.05 mm
G_GRAPH	132	Continuous	0.20	Plot	0.20 mm
G_GRID	44	Continuous	0.05	Plot	0.05 mm
G_GRIDXT	45	Continuous	0.13	Plot	0.13 mm
G_HATCH	253	Continuous	0.05	Plot	0.05 mm
G_HIDDEN	150	HIDDEN	0.13	Plot	0.13 mm
G_MATCH	51	PHANTOM2	0.40	Plot	0.40 mm
G_MATCHXT	50	Continuous	0.20	Plot	0.20 mm
G_PHANT	150	PHANTOM	0.13	Plot	0.13 mm
G_PIPELINE	255	Continuous	0.20	Plot	0.20 mm
G_REV	240	Continuous	0.20	Plot	0.20 mm
G_SCOPECLOUD	blue	DASHED	0.20	Plot	0.20 mm
G_SYMBOL	50	Continuous	0.20	Plot	0.20 mm
G_TEXT_E	50	Continuous	0.20	Plot	0.20 mm
G_TEXT_R	240	Continuous	0.20	Plot	0.20 mm
G_VPORT	144	Continuous	0.05	Plot	0.05 mm
GUIDE	0	Continuous	По умолчанию	Plot	По умолчанию
INST	cyan	Continuous	0.25	Plot	0.25 mm
MDO_ITEMS	white	Continuous	0.25	Plot	0.25 mm
MISC	white	Continuous	0.25	Plot	0.25 mm
PIPE_INLINE	yellow	Continuous	0.25	Plot	0.25 mm
PIPE_PRI	22	Continuous	0.50	Plot	0.50 mm
PIPE_SEC	yellow	Continuous	0.25	Plot	0.25 mm
PP_EQUIPMENT	80	Continuous	0.20	Plot	0.20 mm

Атрибуты	
DRAWING_NUMBER	XXXX-Y-XX-XX-Y-XXXX-YY
SHEET	0 of 0
REV.	XX
CONTRACT_NO	0000
PROJECT_NO	XXX-XXX-XXX
TITLE_NAME_1	TITLE_NAME_1
TITLE_NAME_2	TITLE_NAME_2
TITLE_NAME_3	TITLE_NAME_3
TITLE_NAME_4	TITLE_NAME_4
TITLE_NAME_5	TITLE_NAME_5
TITLE_NAME_6	TITLE_NAME_6
REV1	
REV2	
REV3	
REV4	
REV5	

